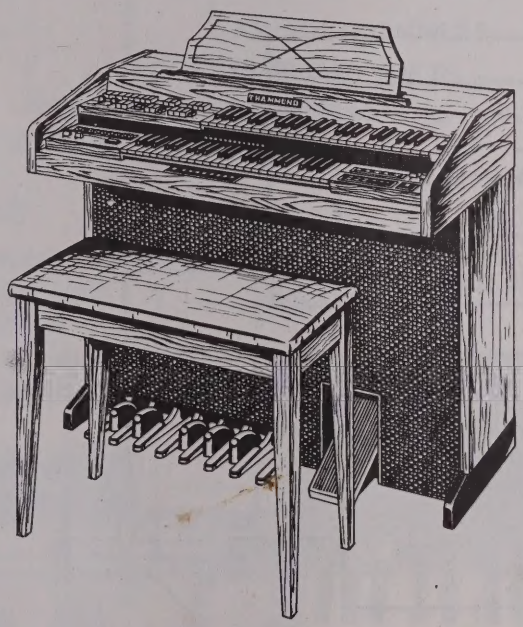
SERVICE MANUAL

HAMMOND®

MODEL 134/136

SERIES 100



CAUTION
SEE SAFETY NOTICE ON
INSIDE COVER SHEET

H000-006245

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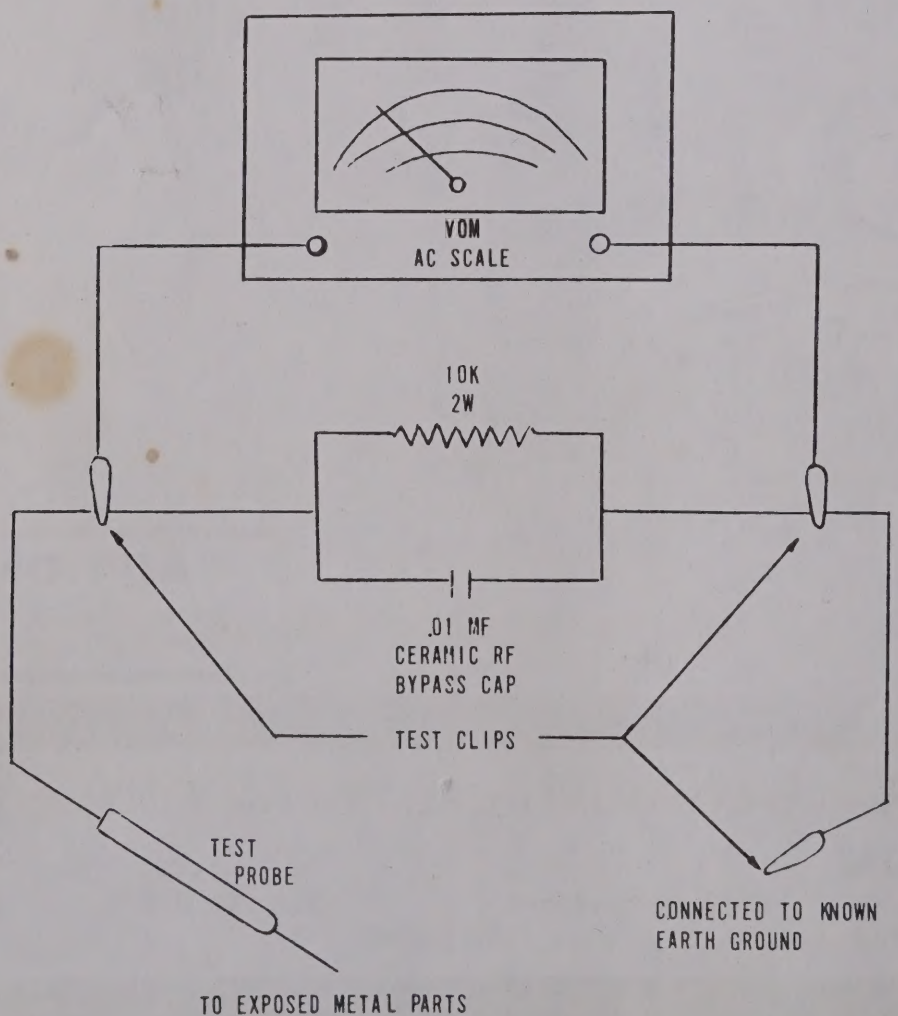
SAFETY NOTICE

Great care has been taken in the design and manufacture of this product to assure that no shock hazard exists on any exposed metal parts. Internal service operations can expose the technician to hazardous line voltages and accidentally cause these voltages to appear on exposed metal parts during repair or reassembly of product components. To prevent this, work on these products should only be performed by those who are thoroughly familiar with the precautions necessary when working on this type of equipment.

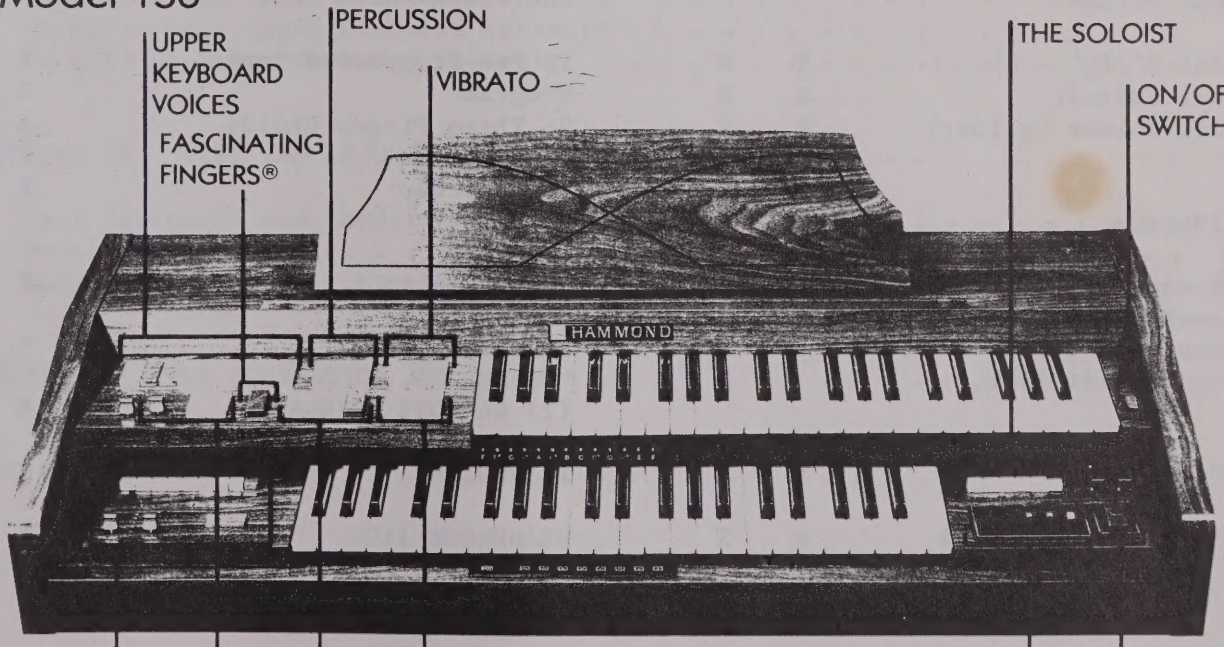
To protect the user, it is required that all enclosure parts and safety interlocks be restored to their original condition and the following tests be performed before returning the product to the owner after any service operation.

Plug the AC line cord directly into a line voltage AC receptacle (do not use an isolation transformer for this test) and turn the product on. Connect the network (as shown below) in series with all exposed metal parts and a known earth ground such as a water pipe or conduit. Use an AC VOM of 5,000 ohms per volt or higher sensitivity to measure the voltage drop across the network. Move the network connection to each exposed metal part (metal chassis, screw heads, knobs and control shafts, escutcheon, etc.) and measure the voltage drop across the network. Reverse the line plug and repeat the measurements. Any reading of 4 volts RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the product to the user.



Model 134

Model 136



FEATURES	MODEL 134	136
UPPER VOICES		
Flutes 16',8',4',2'	X	X
Flute 5-1/3'		X
Clarinet 16'	X	X
Trumpet 8'	X	X
String 8'	X	X
Upper Sustain	X	X
UPPER PERCUSSION		
Piano	X	X
Harpsichord	X	X
Vibraharp		X
LOWER VOICES		
Flute 8'	X	X
Flute 4'		X
String 8'	X	X
Horn 8'	X	X
PEDAL VOICES		
Pedal 8'/16' - 8'	X	X
Pedal Sustain	X	X
Pedal Volume (slider)	X	X
ANIMATION		
Vibrato On/Small/Delayed	X	X
Ensemble		X
Tremolo Flutes		X
Tremolo Fast/Slow		X
PRO CHORD ®	X	X
FASCINATING FINGERS®	X	X

FEATURES	MODEL 134	136
THE SOLOIST		
Sax, Trombone, Trumpet		X
Pan Flute, Syntha Sound		X
THE DRUMMER		
Disco, Samba	X	X
Bossa Nova, Beguine	X	X
Cha Cha, Tango	X	X
Waltz, March	X	X
Ballad, Country	X	X
Jazz, Rock	X	X
Autochord®	X	X
Volume & Tempo (sliders)	X	X
EASY PLAY		
One Finger Chords	48	48
Memory	X	X
Bass Walk	X	X
COMPOSE-A-CHORD PLUS		
13 Pre-Programmed Songs		X
Program		X
96 Three Finger Chords		X
Auto Perform		X
Auto Accomp		X
MANUAL BALANCE	X	X
REVERB		X
(2) 44-NOTE KEYBOARDS	X	X
13 PEDALS	X	X
HEADPHONE JACK	X	X

AUDIO SYSTEM: One 25-Watt Amplifier with 12" wide range speaker.
DIMENSIONS: Length 43", Depth 19", Height 40-7/8" with music panel up.
WEIGHT: Approximately 125 lbs. excluding bench.

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SECTION I
HOW THE ORGAN OPERATES

MODEL 134,136100

GENERAL

This manual covers both Model 134000 and Model 136000. References to the models are abbreviated as follows: 134 and 136. Each major feature is described with specific model feature deletions or exclusions mentioned where applicable.

GENERATOR SYSTEM

Tone generation is accomplished by using microcomputer controlled M112 polyphonic eight channel sound generators. In the case of the 134, two M112's are used, while in the 136 there are four.

The Model 134 generators are assigned as follows:

1. Upper Keyboard Flutes and Brites
2. Lower Keyboard Flutes, Brites and Arpeggiator, also Pedals

The Model 136 generators are assigned as follows:

1. Upper Keyboard 5-1/3' Flute
2. Upper Keyboard Flutes, Brites and Mono 16' (Soloist)
3. Upper Keyboard Perc and Mono 8'/4' (Soloist)
4. Lower Keyboard Flutes, Brites and Arpeggiator, also Pedals

PERCUSSION

The percussion voices, PIANO and HARPSICHORD, on the Model 136 are polyphonic and additive to all other upper keyboard voices. On the Model 134, these voices are solo and will cancel upper voices.

The Model 136 includes VIBRAHARP. This voice is also polyphonic. The strike tone is unitarily keyed by upper keydown information. This tab automatically activates sustain.

SYNTHESIZER

Called THE SOLOIST, the Model 136 incorporates five voices SAX thru SYNTHA SOUND which are monophonic high note select. These may be used in conjunction with upper and percussion voices. A separate VOLUME slider is provided.

UPPER KEYBOARD VOICES

The upper voices are divided into two groups, flutes and brites. There are five flute footages available, including FLUTE 5-1/3'. Note, this voice is only on Model 136.

The brites consist of CLARINET 16', TRUMPET 8' and STRING 8'. All tab voices within the upper voice section are additive to each other and to percussion voices and also to Soloist voices, in the case of Model 136.

UPPER SUSTAIN is located in this group and is available on all upper voice tabs.

LOWER KEYBOARD VOICES

The lower voices are also divided into flutes and brites, two tabs each. Note, FLUTE 4' is only available on Model 136. All tab voices within this group are additive.

MANUAL BALANCE

A MANUAL BALANCE slider is provided to allow for relative level adjustment between the upper and/or percussion sections and the lower.

PEDALS

Pedal tones are available in either 8' pitch or the combination of 8' and 16'. A separate slider for pedal volume is provided. Pedals are monophonic high note select.

AUTOMATIC ARPEGGIATOR

The automatic arpeggiator called FASCINATING FINGERS® operates in a fixed up/down mode within a five octave range.

RHYTHM

The rhythm section (THE DRUMMER), located in the lower left endblock, has twelve patterns. A switch on the left side controls which group of six patterns is available at one time. To enable a selected pattern, depress SILENT SOUND and key a lower keyboard or pedal note. To silence the voice, depress the SILENT SOUND switch again. The push button switches discussed in this section, including AUTOCHORD®, are of the lighted momentary type.

RHYTHM BREAK is initiated by touching the break button at any time while a pattern is playing. In addition, as an intro, a break may be played simply by touching the break button prior to starting the rhythm unit.

During a break sequence, both lower keyboard and pedals are cancelled. This includes AUTOCHORD and MEMORY modes of operation. After the break, these will return to normal.

Activating AUTOCHORD causes lower keyboard brite voices and pedals to sound rhythmically with the pattern enabled. Note, flute tones are not chopped.

VOLUME and TEMPO sliders are provided to adjust the rhythm unit as desired. Located between them is a tempo LED indicator which flashes on each beat of the measure.

PRO CHORD

PRO CHORD® is available at all times. With this rocker tab depressed, any lower keyboard notes played will automatically key the corresponding notes on the upper keyboard above the note(s) played on the upper plus the note(s) on one octave above the note(s) played on the upper. This feature operates over the entire keyboard range. Soloist voices are not affected by this tab.

COMPOSE-A-CHORD

The Model 136 incorporates the ease of play Compose-A-Chord system. In order to describe the performance, consider the eight control buttons which are used to set up the system. These are momentary push buttons which light up (except CANCEL) in the "on" mode. Additional controls are located in the front rail. Key LED indicators are mounted in the front strip over the thirteen notes from F2 to F3. The front strip lights are "on" only when one or more of the Compose-A-Chord functional buttons is "on".

Operating performance under various switching modes is as follows:

One Finger Chord (OFC)

When ONE FINGER CHORDS button is actuated, there are 96 chords and associated bass notes available to be played by selecting one of eight chord types from the front rail switches and then playing the desired note anywhere on the lower keyboard. The correct chord and pedal will sound and an identifying LED will light. The "chord type" switches are arranged from right to left in the following order: major, minor, seventh, minor seventh, major seventh, major sixth, augmented and diminished seventh. When AUTOCHORD on the rhythm unit is actuated, the chord will be chopped and the bass alternated between root and fifth in the programmed rhythm manner for the particular pattern selected.

In addition to the chord type buttons, chords in One Finger Chord mode may also be altered by depressing a pedal along with the lower keyboard note. To activate a 7th chord, play a natural (brown) pedal, for a minor chord, play a sharp (black) pedal and for minor 7th chords, play both a natural and sharp pedal at the same time. (Note, in the OFC mode, the chord type automatically returns to Major.)

Three Finger Chords (TFC)

Performance is identical to the OFC mode except the pedals do not sound and all notes in the chord are identified by LED indicators. Therefore, by playing only one note, the player can readily determine the note complement of any of the 96 chords in the chord library for self teaching purposes. (Note, in the TFC mode, the chord type does not automatically return to Major. In fact, each new chord played requires that the appropriate chord type be depressed prior to playing the note.)

The primary function of this mode of the Compose-A-Chord system is to teach chords. This may be done dynamically while playing a particular song or as a look up table to identify the notes of any given chord in the chord library. After turning "ON" the THREE FINGER CHORDS switch, the notes of a particular chord will be identified by the LED indicators when a "chord type" switch is operated followed by the note. For example, to identify the notes of a G 7th chord, one pushes the 7th button in the front rail and then a G key. If this is the only new chord the player anticipates encountering in a new song he is attempting to learn, he can set up the chord before he begins to play. If he is attempting to learn more than one chord in a song, he can re-enter the library while playing simply by pushing the "chord type" button and then the note of the desired chord. The note identifying the LED's of a selected chord is entered or the Three Finger mode is turned "OFF". It is important to remember that a new chord cannot be displayed until a "chord type" switch has first been operated.

Memory

Activating MEMORY allows lower keyboard notes to be latched "on" as they are played and stay electrically latched until a new note or notes are played.

Auto Accompaniment

This is a preset which turns on lower keyboard FLUTE 8', STRING 8' and PEDAL 8'. It permits these voices to be readily set up from the Compose-A-Chord group.

Bass Walk

In the "off" mode, the bass sounds in the rhythmic root/fifth manner. In the "on" mode, the walking bass pattern associated with the particular rhythm pattern selected is activated.

Program

This feature permits the player to program the accompaniment and bass for a complete song. This is achieved simply by entering the chords in proper sequence by playing them as one finger chords. In 4/4 time, chords should be entered and played back as half notes (two per measure), while in 3/4 time, they are processed as whole notes (one per measure). In either case, longer intervals are achieved by entering the same chord as many times as necessary. If an error is made in the entry process, it can be corrected by operating the RESET button on the front rail. Each time the RESET is operated, it removes the entry shown on the lights.

A maximum of 200 chord entries can be programmed with the system. When the PROGRAM button is activated, all other Compose-A-Chord features except AUTO ACCOMPANIMENT are automatically cancelled. Any program stored in the PROGRAM "on" mode becomes invalid when the button is turned "off" or the organ is turned "off".

The player has three optional methods of using the PROGRAM feature which are described below:

Program and OFC

When OFC is activated, after the programming has been completed, the first OFC entered will be lighted by its identifying LED. When the OFC note is played, the chord and pedal will sound and then the indicator lights will move to the next chord to be played. Therefore, in this mode, the player can play the complete accompaniment of the programmed song simply by playing the one finger chord lights on the lower keyboard.

Program and TFC

Performance in this mode is similar to that described above for OFC except all notes of the chord are identified and must be played to advance the lights to the next chord in the sequence.

Program and Auto Perform

In this mode, the chords will automatically be played in time sequence when the rhythm unit is running. When AUTOCHORD is "off", the chord notes and bass sound will sound continuously during the half note interval. If AUTOCHORD is "on", chord chopping and auto bass playing will be heard. In this automatic play back condition, chords must be programmed in the proper timing sequences. If accompaniment is properly programmed, the player need only play the melody in time with the accompaniment to sound professional.

Auto Perform Only

When the AUTO PERFORM feature is "on" with PROGRAM "off", bass note will sound automatically based on the fingered chord notes played on the lower keyboard.

Cancel

The cancel button in the Compose-A-Chord control group will cancel all functions except PRORGAM. This is done to prevent inadvertent loss of a programmed song.

Interlock circuitry is also provided so that only one of the OFC or TFC modes can be on at a time. For example, if OFC is "ON" and TFC is turned "ON", OFC is automatically turned "OFF". Similarly, TFC is cancelled when OFC is operated.

EASY PLAY

The Model 134 Easy Play group includes four tabs, all of which have been previously described under the headings of PRO CHORD and COMPOSE-A-CHORD. Note, on the Model 134, there are 48 chords having four chord types available. Chord types are controlled by the operation of the pedals.

VIBRATO

Vibrato is available in two depths and delayed. It affects all organ voices except rhythm.

ANIMATION

On the Model 136, separate animation tabs are provided for flutes (TREMOLO FLUTES) and brites (ENSEMBLE). In the TREMOLO FLUTES mode, two speeds are available, while the ENSEMBLE is fixed at the slow speed. Note, the ENSEMBLE slow speed will override TREMOLO FAST.

REVERBERATION

An Accutronics Type IV Reverb Unit is used to provide this feature on the Model 136. The degree of REVERB is controlled by a slider mounted on the lower right endblock.

AUDIO SYSTEM

A 25 Watt amplifier powered by a split power supply is used to drive the 12 inch wide range speaker.

SECTION III
DISASSEMBLY PROCEDURE

TO REMOVE REAR COVER:

1) Disconnect organ from A.C. line voltage source.

2) Remove six 5/16" hex head screws from rear cover. Pull the cover gently away from the organ.

TO REMOVE TOP PANEL ASSEMBLY:

1) Follow steps to remove rear cover.

2) Remove two 1/4" hex head wood screws that secure both right and left sides of the top panel, as shown in Figure A, Number 1.

3) Reach in from the rear of the organ and release the latch on both right and left sides of the organ, pulling the latch towards the rear of the organ, as shown in Figure B, Number 1.

   (NOTE: Due to the inaccessibility of the right latch, the use of a long screwdriver may be necessary to more easily release this latch.)

4) Gently lift the top panel up and away from the organ.

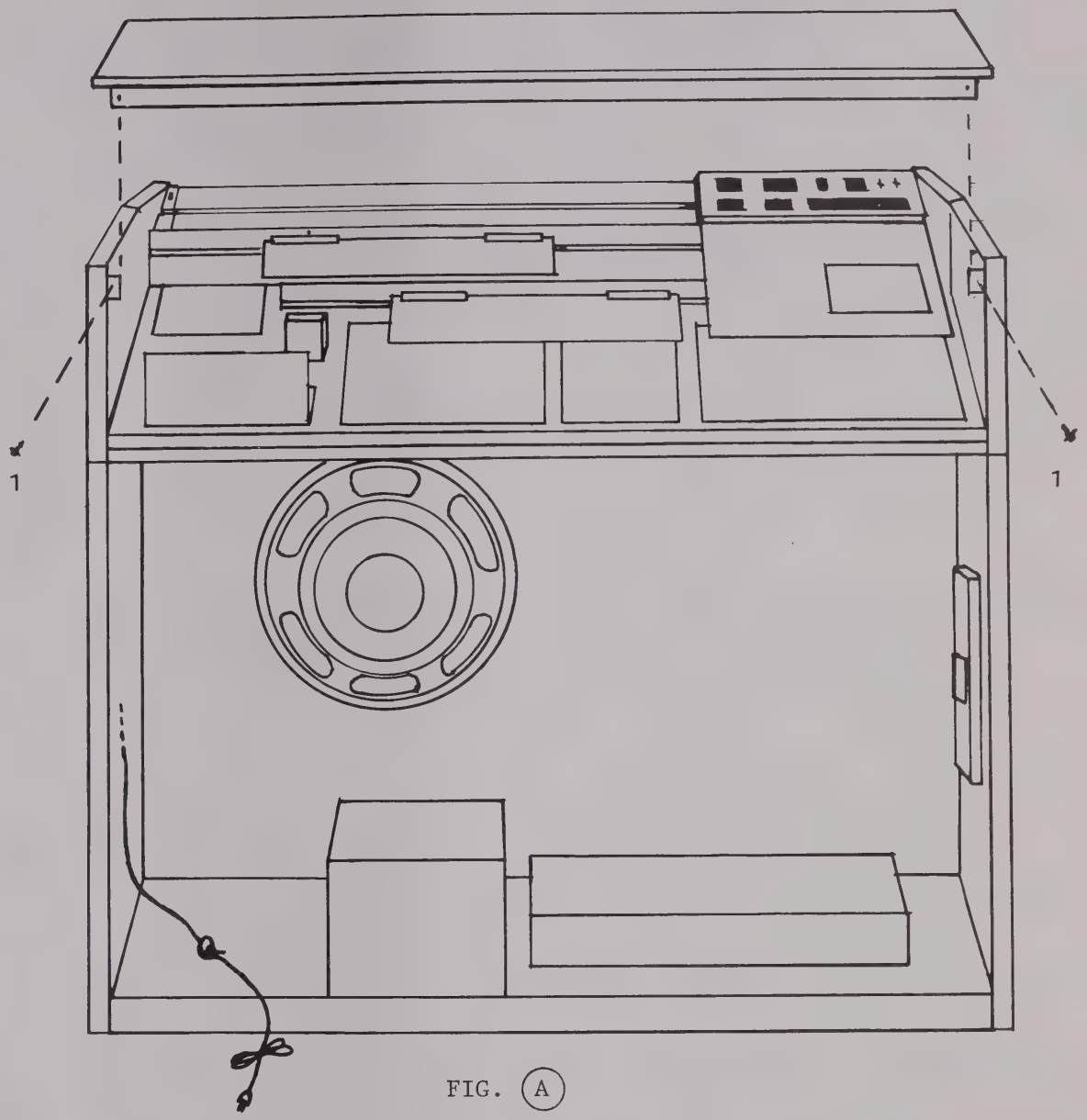


FIG. (A)

FIG. (B)

TO SWING BACK UPPER KEYBOARD ASSEMBLY:

1) Follow steps to remove top panel assembly.

2) Remove one 3/8" hex head bolt (accessible from rear of organ) underneath organ shelf, as shown in Figure C, Number 1.

3) Remove one 7/16" hex head bolt from underneath the organ shelf, as shown in Figure D, Number 1.

4) Grasp the upper keyboard at each end from the front of the organ and tilt backwards until the upper keyboard rests against the top panel mounting brackets.

CAUTION: THE UPPER KEYBOARD MUST BE FIRMLY SECURED IN PLACE WHEN PLACED IN THE UPRIGHT POSITION, OTHERWISE, IT MAY FALL, CAUSING DAMAGE TO ORGAN PARTS OR PERSONAL INJURY.

TO LIFT LOWER KEYBOARD ASSEMBLY:

1) Follow steps to swing back upper keyboard assembly.

2) Remove two 3/8" hex head bolts from underneath the organ shelf, as shown in Figure D, Number 2.

3) Remove two 1/4" hex head screws from underneath the organ shelf, as shown in Figure D, Number 3.

4) Unplug Lower Keyboard Interface P.W.B. (124-000828) from rear of lower keyboard.

5) Grasp the lower keyboard at each end from the front of the organ and tilt backwards.

CAUTION: THE LOWER KEYBOARD MUST BE FIRMLY SECURED WHEN PLACED IN THE UPRIGHT POSITION, OTHERWISE, IT MAY FALL, CAUSING DAMAGE TO ORGAN PARTS OR PERSONAL INJURY.

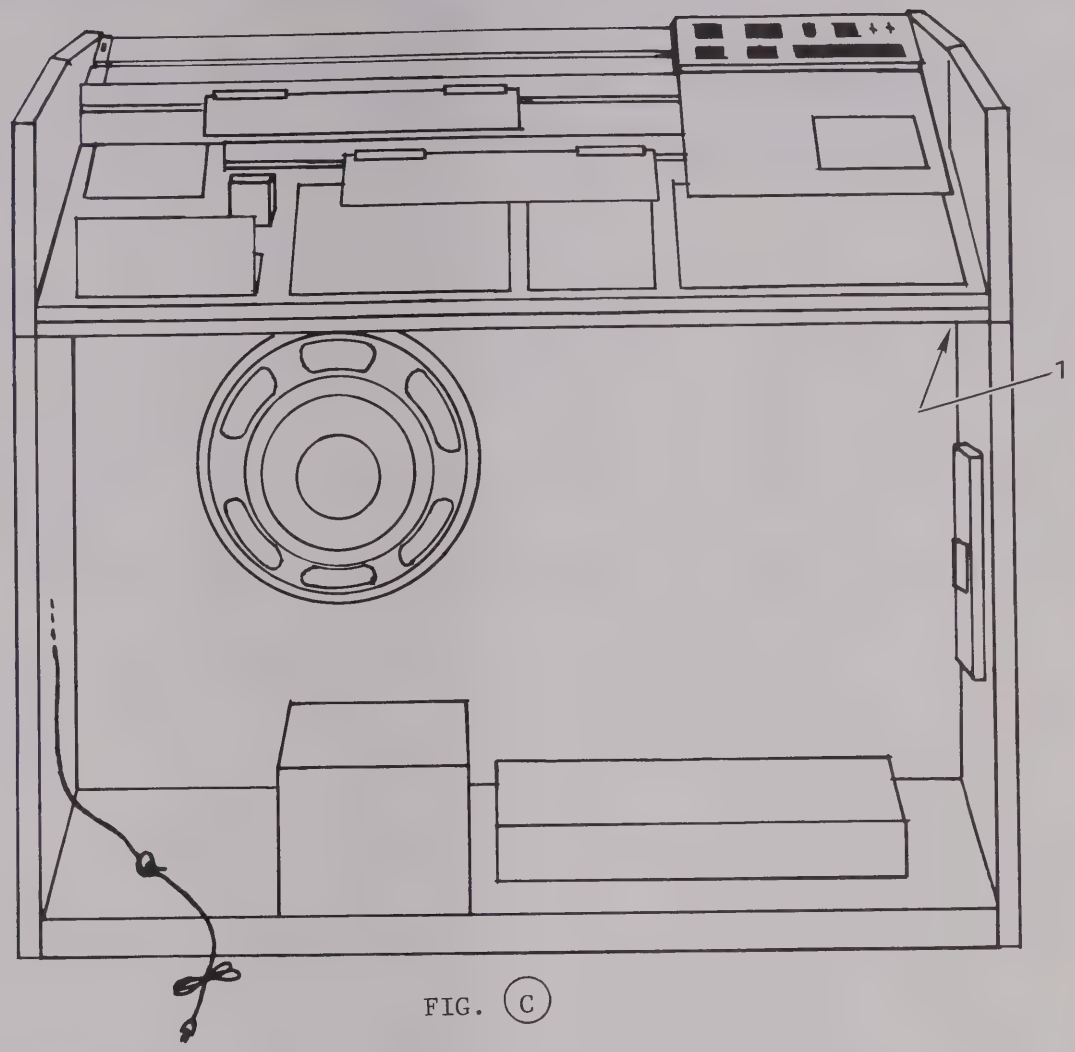
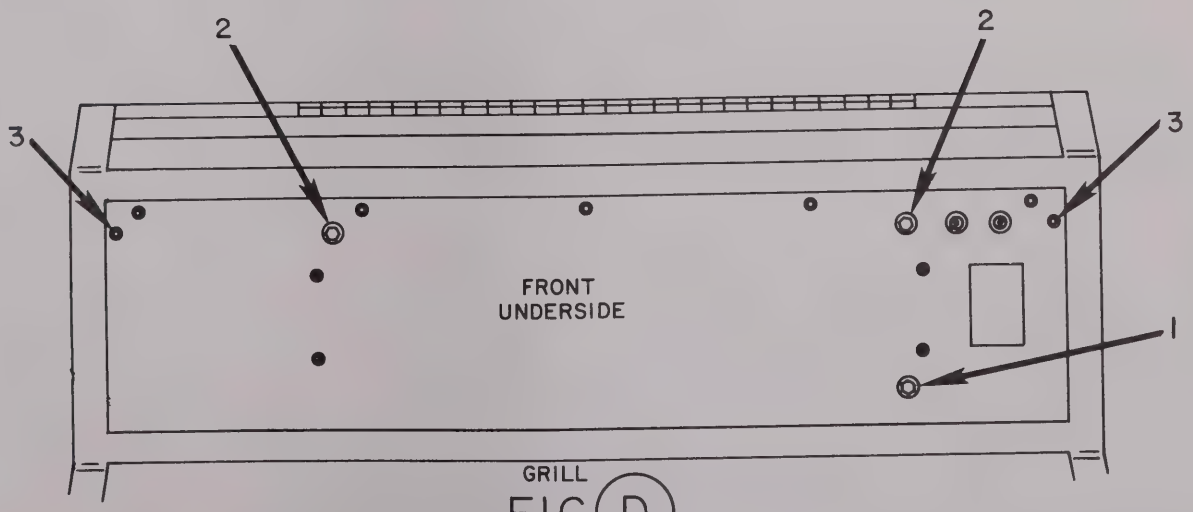


FIG. (C)



GRILL

FIG. (D)

SECTION IV
TEST AND ADJUSTMENT PROCEDURE

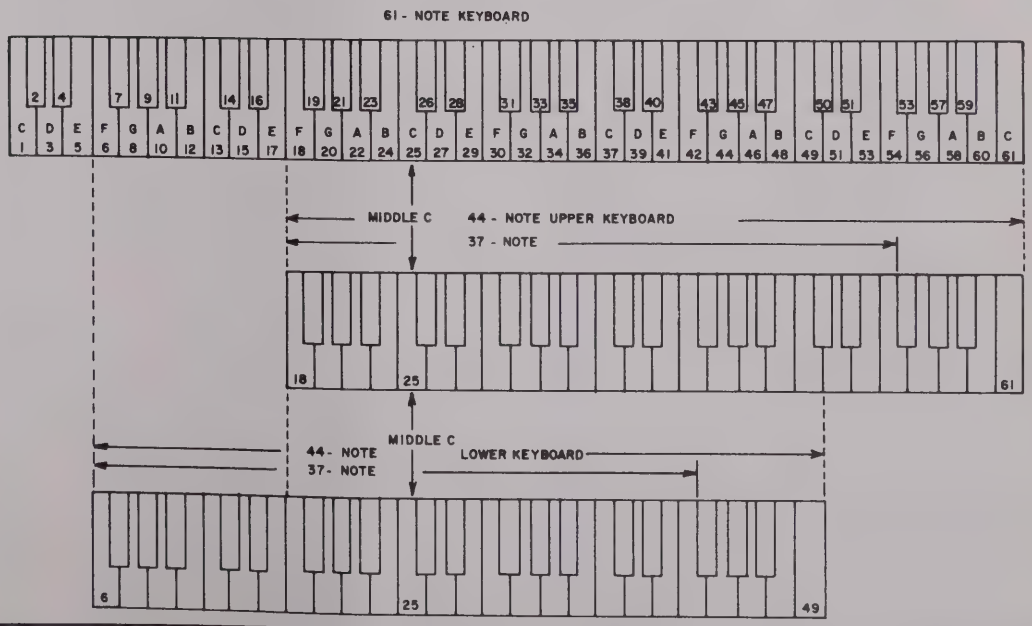
TEST EQUIPMENT

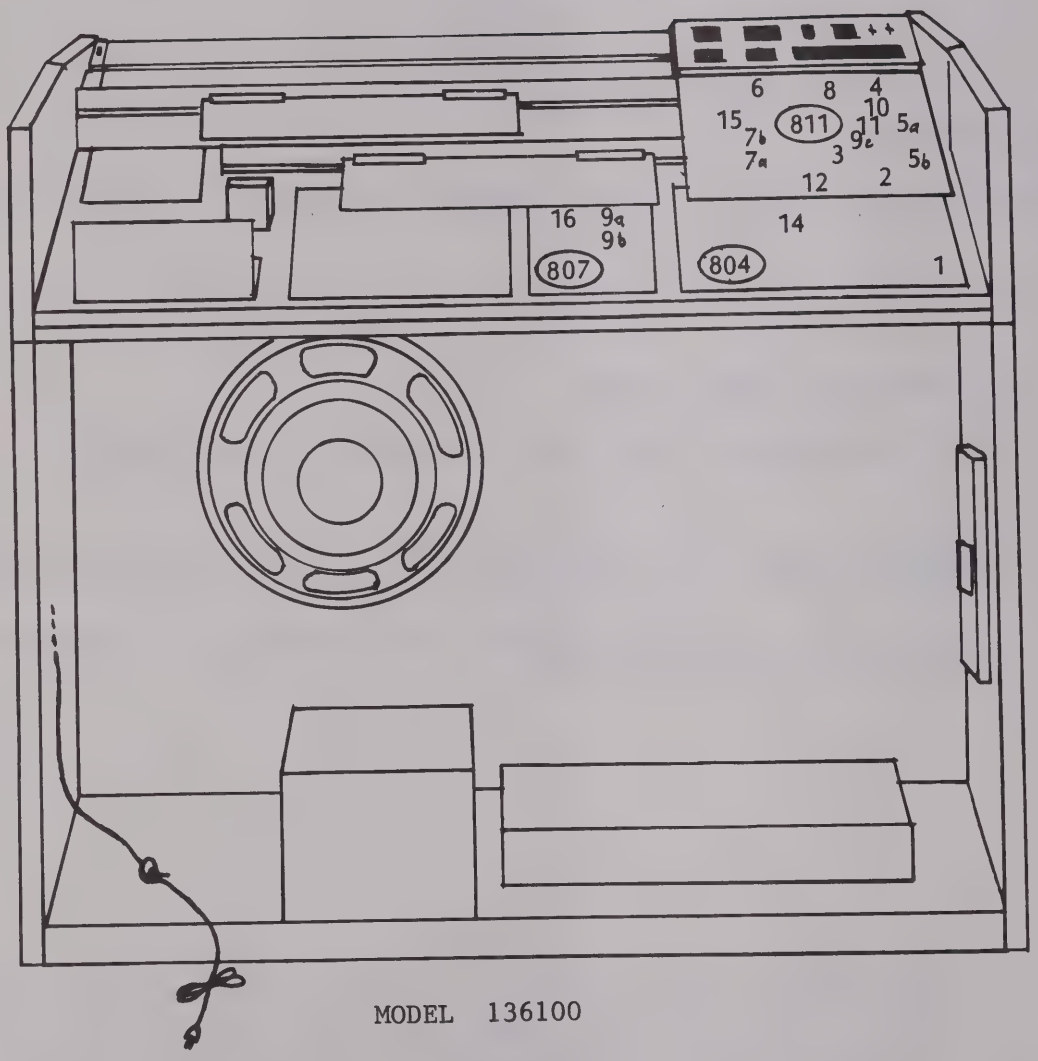
1. Counter HP 5512A or equivalent
2. Oscilloscope Tek 561 or equivalent
3. AC VT VM HP 400H or equivalent

TEST CONDITIONS

The following conditions, unless otherwise stated, are to be maintained during the Test and Adjustment Procedure:

1. The input line voltage shall be set at 120 VAC + 2 VAC during all test (or 220 VAC ± 4 VAC or 240 VAC ± 4 VAC when appropriate).
2. Expression pedal maximum.
3. All tonebars and tabs in the off position, unless specified
4. Manual Balance slider centered. All other volume slide controls at minimum unless associated with step level, then to be set at maximum.
5. Keys called out are with respect to a 61-note console keyboard. Refer to diagram shown below.





MODEL 136100

TEST AND ADJUSTMENT PROCEDURE

MODEL 136100

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
1	Tuning	UKB Trumpet	UKB 61	Freq Counter	Spkr	L1 Tuning Coil (804)	2091.4 Hz
2	Main Level	UKB Flute 16',8',4',2'	UKB 25,29,32	RMS VM 3V	Spkr	R127 Main Level (811)	2.5 V AC
3	Minimum Swell	Min Swell UKB Flute 16',8',4',2'	UKB 49,51,53	RMS VM 300 mV	Spkr	R74 Min Swell (811)	200 mV AC
4	UKB Brites	UKB Clarinet 16' Trumpet 8' String 8'	UKB 25,29,32	RMS VM 3V	Spkr	R35 Upper Brite Level (811)	3.0 V AC (Average)
5	Vibraharp Level & Speed	a,b) Vibraharp	a) UKB 25,29,32 b) None	a) RMS VM 3V b) Scope	a) Spkr b) IC1-1 (811)	a) R20 Vibraharp Level (811) b) R317 Vibraharp Speed (811)	a) 1.0 V AC (Average) b) 4.5 Hz (220 mS)
6	Perc Level	Harpsichord Piano	UKB 25 Repeatedly	Scope	Spkr	R199 Perc Level (811)	20 V PP

TEST AND ADJUSTMENT PROCEDURE

MODEL 136100

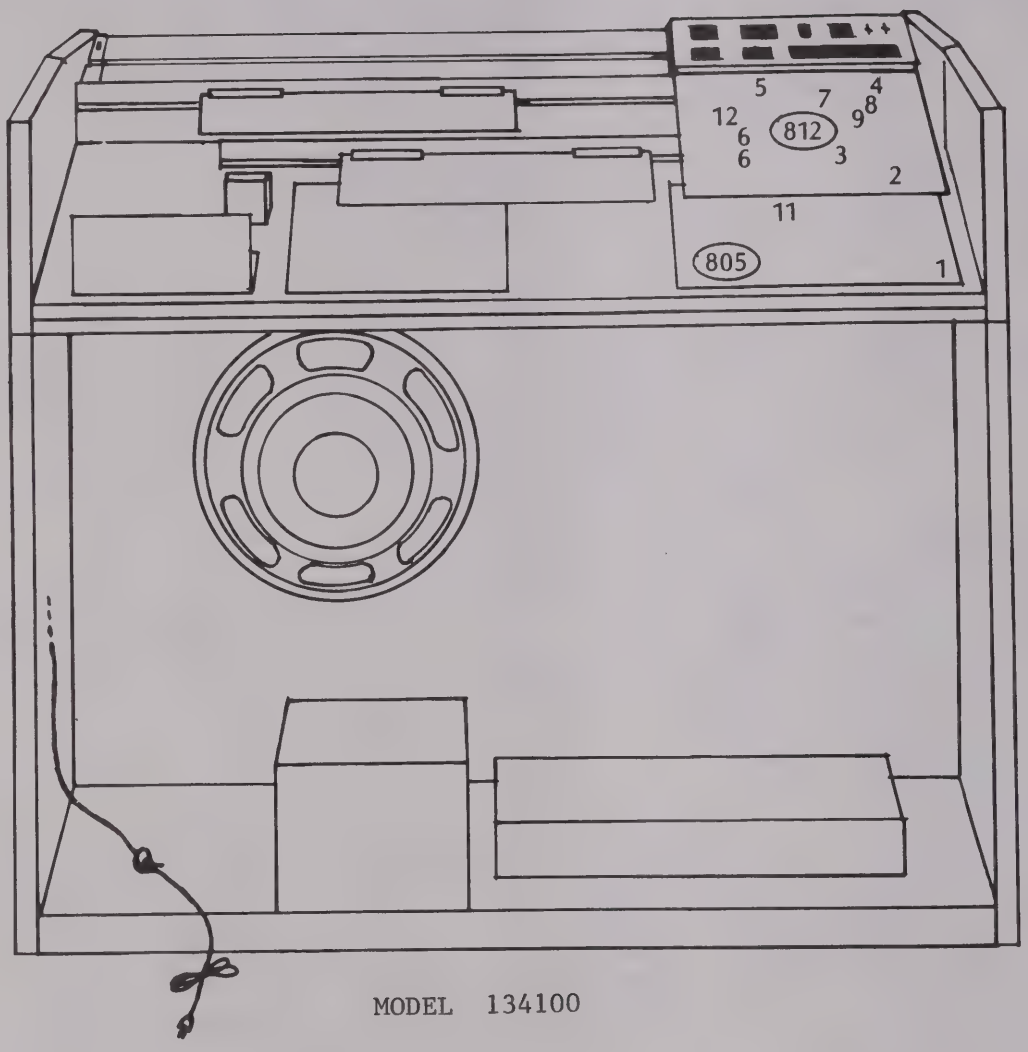
STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
7	LKB Voices	LKB a) Flute 8',4'	a,b) LKB 13,17,20	a,b) RMS VM 3V	a,b)Spkr	a) R214 Lower Flute Level (811)	a) 1.3 V AC
		b) String 8' Horn 8'				b) R217 Lower Bright Level (811)	b) 1.0 V AC
8	Pedal Level	16',8' Pedal Pedal Sustain Pedal Volume Pot At Max	PKB 1	RMS VM 10V	Spkr	R91 Pedal Level (811)	5.0 V AC
9	Soloist	Soloist Volume Pot At Max a,b)Syntha	a) UKB 20	a,b)Scope	a-c)Spkr	a)R91 Cut Off (807)	a) Adjust for resonance. This is defined as the point for purest flute-like tone (no harmonics) and maximum output voltage.
			b) UKB 20 Repeatedly			b)R88 Width (807)	b) Turn width control to extreme right (clockwise) position. Slowly readjust to left (counter-clockwise) to the point of no noticeable increase in sweep.
		c) Pan Flute	c) UKB 25	c)RMS VM 10V		c)R43 Synth Level (811)	c) 4.0 V AC
10	Fascinating Fingers	Rhythm Tempo At Max Fascinating Fingers	LKB 13	RMS VM 3V	Spkr	R33 Arp Level (811)	2.0 V AC (Average)
11	Rhythm	Waltz Rhythm Volume At Max Tempo at 1/3 Max	None	Scope	Spkr	R44 Rhy Level (811)	Adjust to 35 V PP on beats 2 or 3 of measure 1

TEST AND ADJUSTMENT PROCEDURE

MODEL 136100

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
12	Reverb	UKB Flute 16',8',4',2' Vibrato on Reverb Pot At Max	UKB 25,29,32	RMS VM 300 mV	IC22-1 (811)	R108 Rev Level (811)	100 mV AC
13	Hum and Noise	None	None	RMS VM 30 mV	Spkr		20 mV
14*	Generator Cutoff	All UKB Tabs	UKB Key at Least Seven Notes And Release			R141 Cutoff (804)	Adjust to the point where feed through has subsided.
15*	LKB Bright Null	Disconnect J92 from PWB (811) Rhythm Tempo Pot At Max Rhythm Volume Pot To Minimum Autochord Bossa Nova			Spkr	R220 Bright Null (811)	Adjust for minimum thump.
16*	Soloist Null	Trumpet Disconnect J51 From PWB (807)	Any UKB Key Repeatedly			R103 Null (807)	Adjust for minimum thump.

* The "Cutoff" and "Null" Controls are "factory adjust" pots and should not require readjustment unless during repair the associated 075-003280 or 075-003080 IC requires replacement.



MODEL 134100

TEST AND ADJUSTMENT PROCEDURE

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STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
1	Tuning	UKB Trumpet	UKB 61	Freq Counter	Spkr	L1 Tuning Coil (805)	2091.4 Hz
2	Main Level	UKB Flute 16',8',4',2'	UKB 25,29,32	RMS VM 3V	Spkr	R127 Main Level (812)	2.5 V AC
3	Minimum Swell	Min Swell UKB Flute 16',8',4',2'	UKB 49,51,53	RMS VM 300 mV	Spkr	R74 Min Swell (812)	200 mV AC
4	UKB Brites	UKB Clarinet 16' Trumpet 8' String 8'	UKB 25,29,32	RMS VM 3V	Spkr	R35 Upper Brite Level (812)	3.0 V AC (Average)
5	Perc Level	Harpsichord Piano	UKB 25 Repeatedly	Scope	Spkr	R199 Perc Level (812)	20 V PP (Average)
6	LKB Voices	LKB a) Flute 8' b) String 8' Horn 8'	a,b) LKB 13,17,20	a,b) RMS VM 3V	a,b)Spkr	a) R214 Lower Flute Level (812) b) R217 Lower Bright Level (812)	a) 1.0 V AC b) 1.0 V AC

TEST AND ADJUSTMENT PROCEDURE

MODEL 134100

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
7	Pedal Level	16',8' Pedal Pedal Sustain Pedal Volume Pot At Max	PKB 1	RMS VM 10V	Spkr	R91 Pedal Level (812)	5.0 V AC
8	Fascinating Fingers	Rhythm Tempo At Max Fascinating Fingers	LKB 13	RMS VM 3V	Spkr	R33 Arp Level (812)	2.0 V AC (Average)
9	Rhythm	Waltz Rhythm Volume At Max Tempo At 1/3 Max	None	Scope	Spkr	R44 Rhy Level (812)	Adjust to 35 V PP on beats 2 or 3 of measure 1
10	Hum and Noise	None	None	RMS VM 30 mV	Spkr		20 mV
11 *	Generator Cutoff	All UKB Tabs	UKB Key at Least Seven Notes And Release			R141 Cutoff (805)	Adjust to the point where feed through has subsided.
12 *	LKB Bright Null	Disconnect J92 from PWB (812) Rhythm Tempo Pot At Max Rhythm Volume Pot To Minimum Autochord Bossa Nova			Spkr	R220 Bright Null (812)	Adjust for minimum thump.

* The "Cutoff" and "Null" Controls are "factory adjust" pots and should not require readjustment unless during repair the associated 075-003280 or 075-003080 IC requires replacement.

SECTION V
PWB SCHEMATICS AND LAYOUTS

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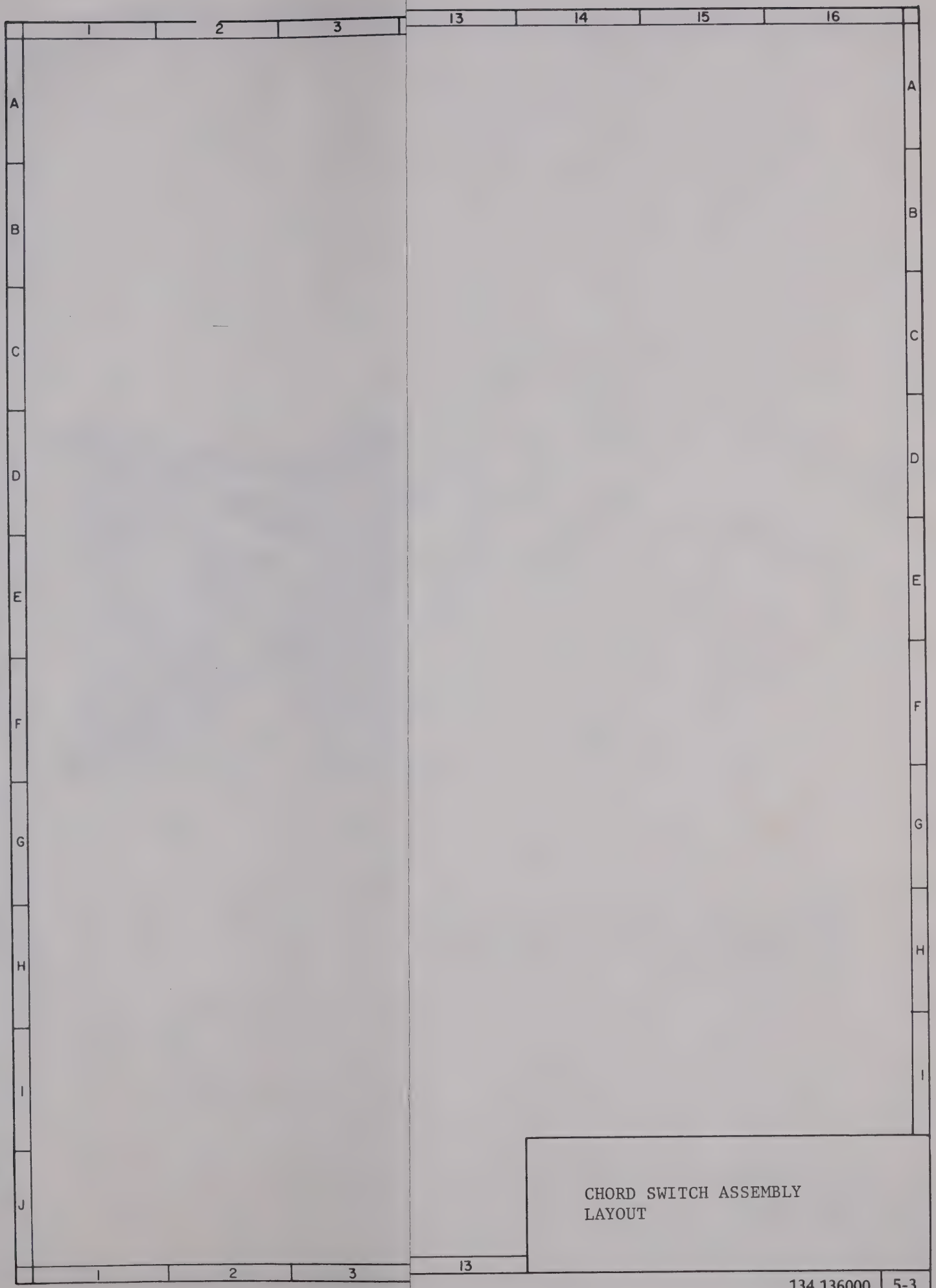
1
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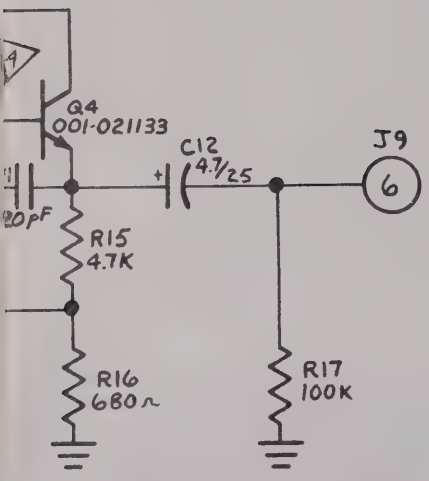
3
13
14
15
16
A
B
C
D
E
F
G
H
I
J
CHORD SWITCH ASSEMBLY
LAYOUT

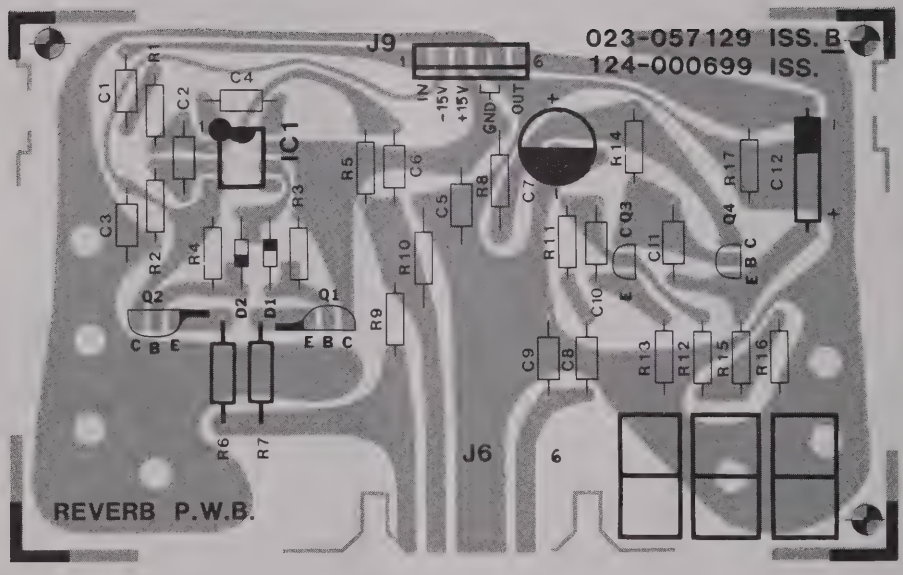
(824) Key Contact PWB - 19 Note . . . . . 124-000824 . . Schematic 5-22
Layout 5-23

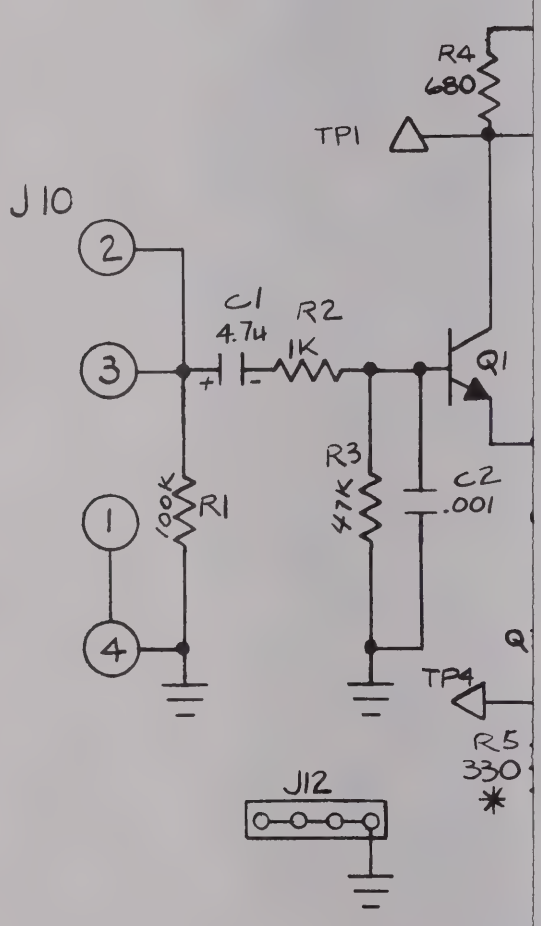
(827) Sine Filter PWB . . . . . 124-000827 . . Schematic 5-24
Layout 5-24

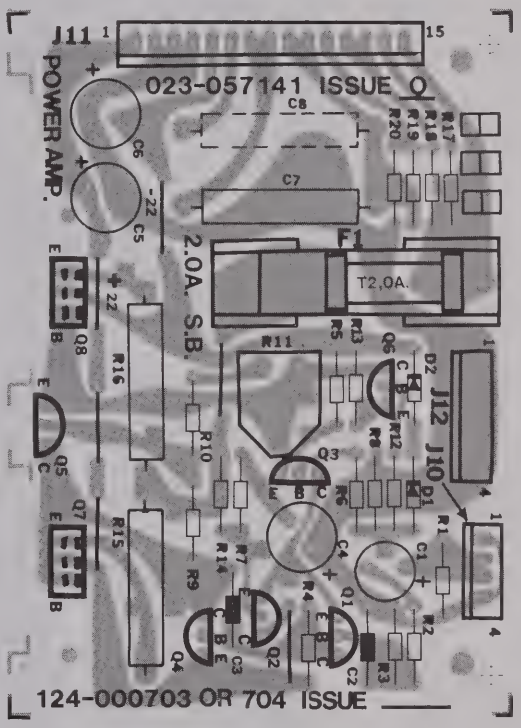
(828) Keyboard Interface PWB . . . . . 124-000828 . . Schematic 5-25
Layout 5-26

CHORD SWITCH ASSEMBLY
LAYOUT

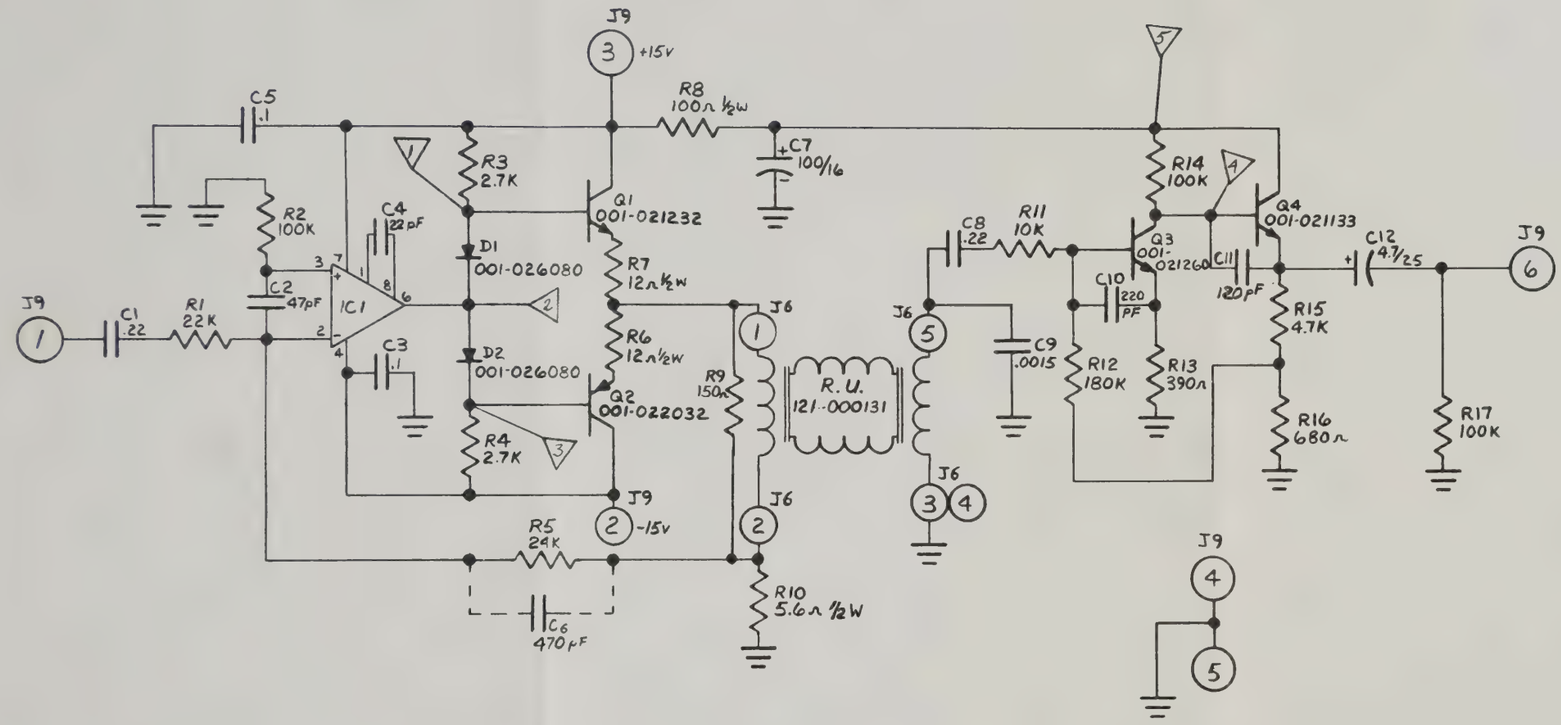

Q4
001-021133
C12
4.7/25
J9
6
R15
4.7K
R16
680Ω
R17
100K

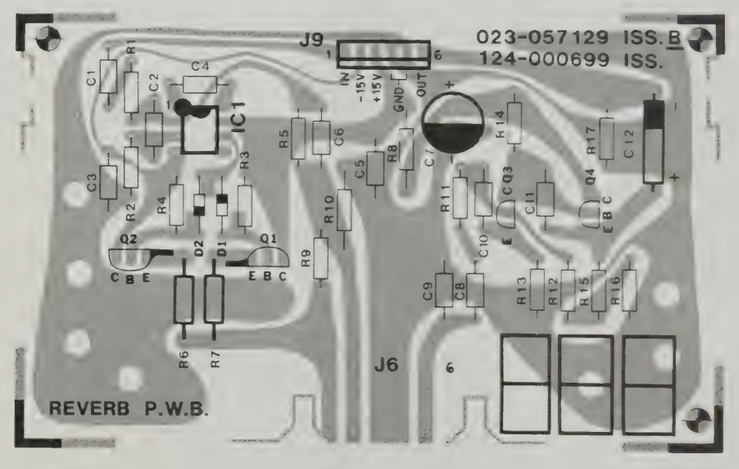

J9
023-057129 ISS. B
124-000699 ISS.
IN
-15V
+15V
GND
OUT
IC1
J6
REVERB P.W.B.





POWER AMP PWB
SCHEMATIC & LAYOUT
124-000703, 704 EXP



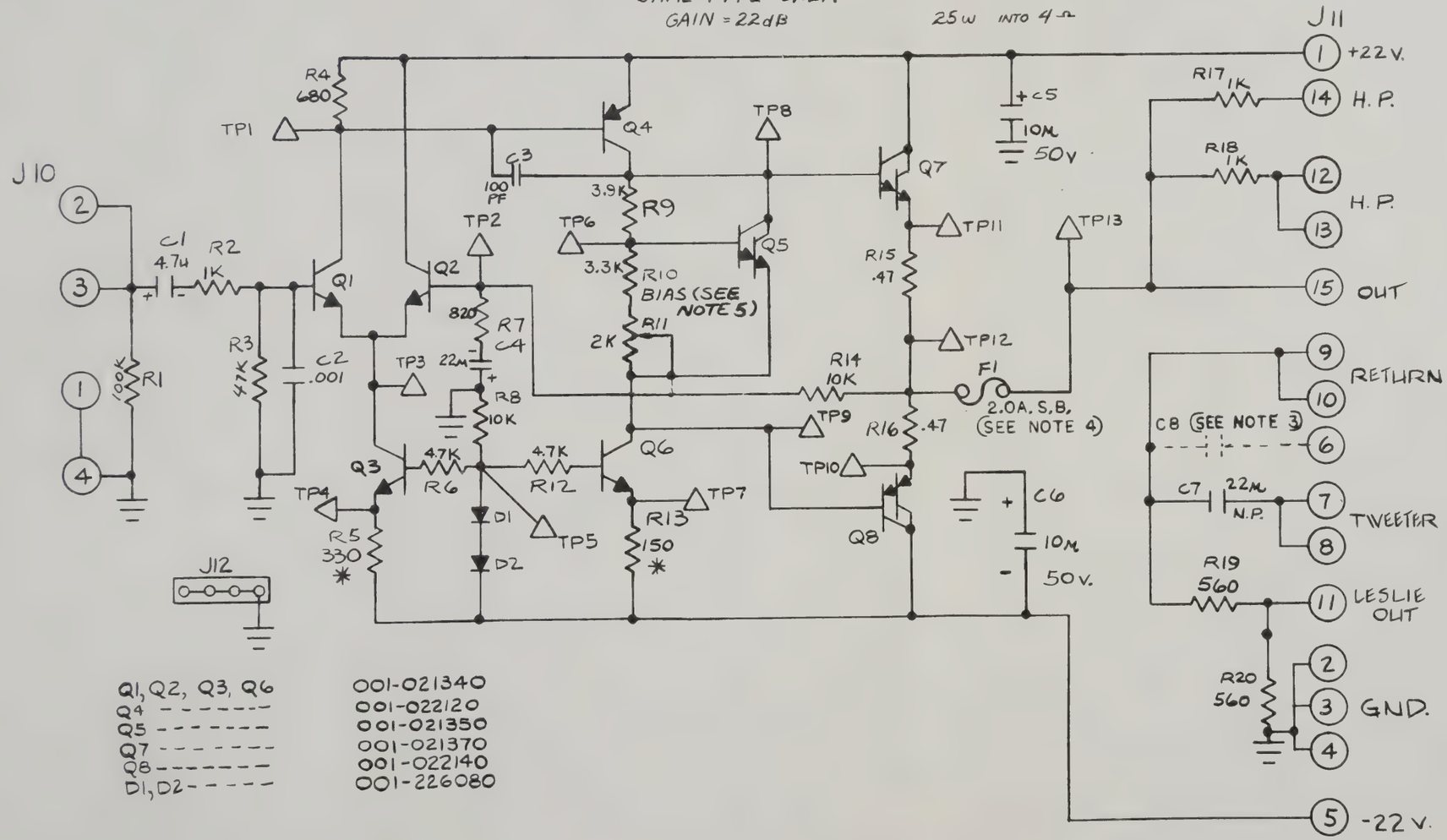


NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE ¼ WATT ±5%
   ALL CAPACITORS ARE IN MICROFARADS
2. IC 1 IS 075-000301

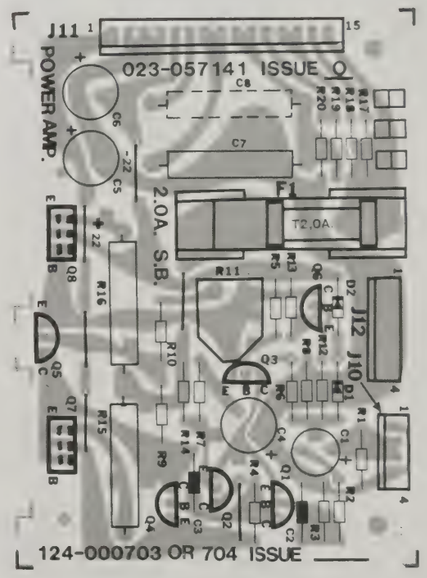
REVERB AMP PWB
SCHEMATIC & LAYOUT
124-000699

NOTES:
1) ALL RESISTOR VALUES IN OHMS.
2) ALL CAPACITOR VALUES IN MFD UNLESS OTHERWISE SPECIFIED.
3. CAP. NOT USED ON 124-000703 AND 124-000704 ASSY.
4 REPLACE ONLY WITH SAME TYPE AND RATING FUSE.
5. WITH NO INPUT SIGNAL, ADJUST R11 FOR 25m A CURRENT ON +22 V (J11-1) SUPPLY.
6. * DENOTES FLAME RETARDANT COMPONENT – REPLACE WITH SAME TYPE ONLY.

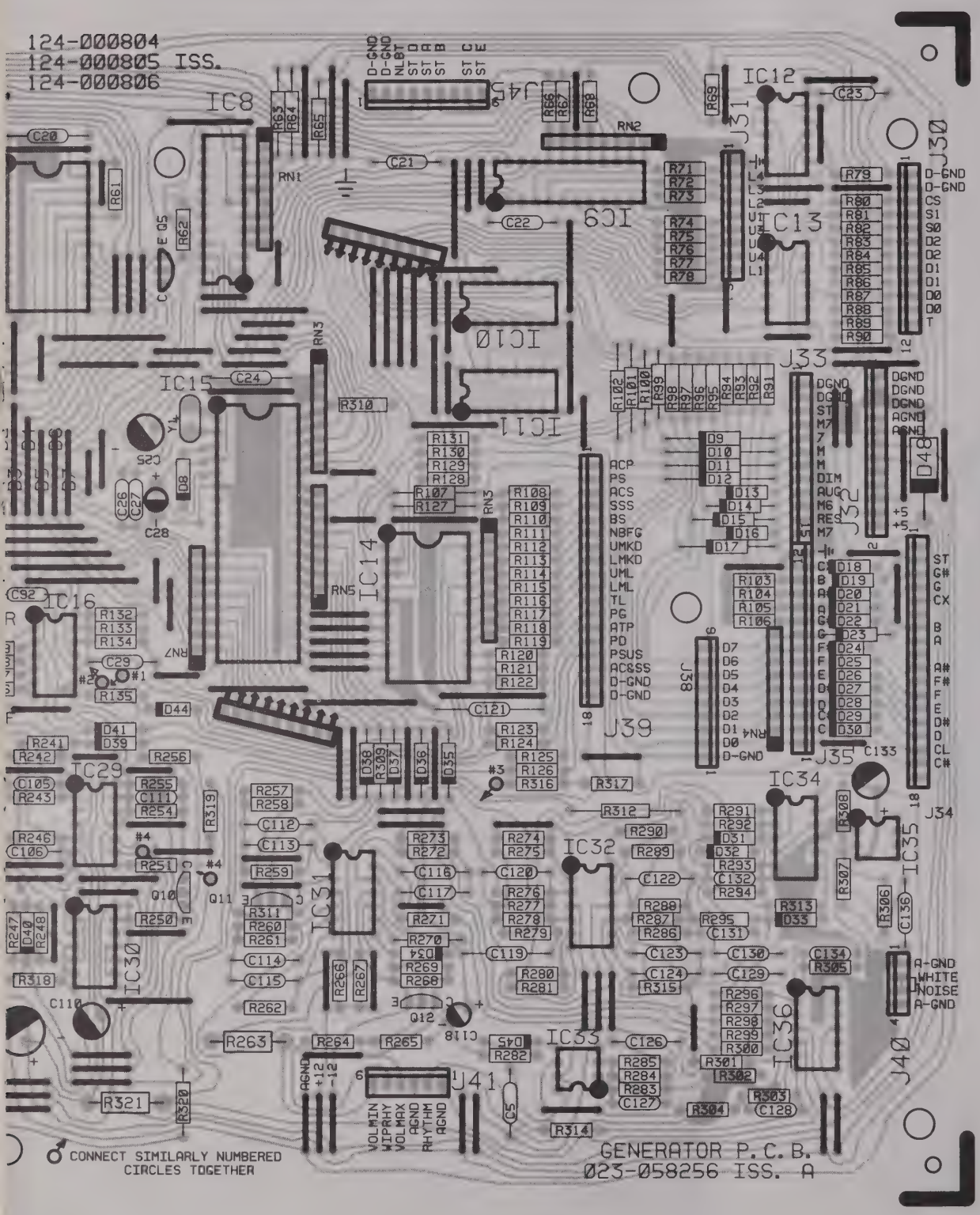
GAIN = 22dB 25 w INTO 4 Ω

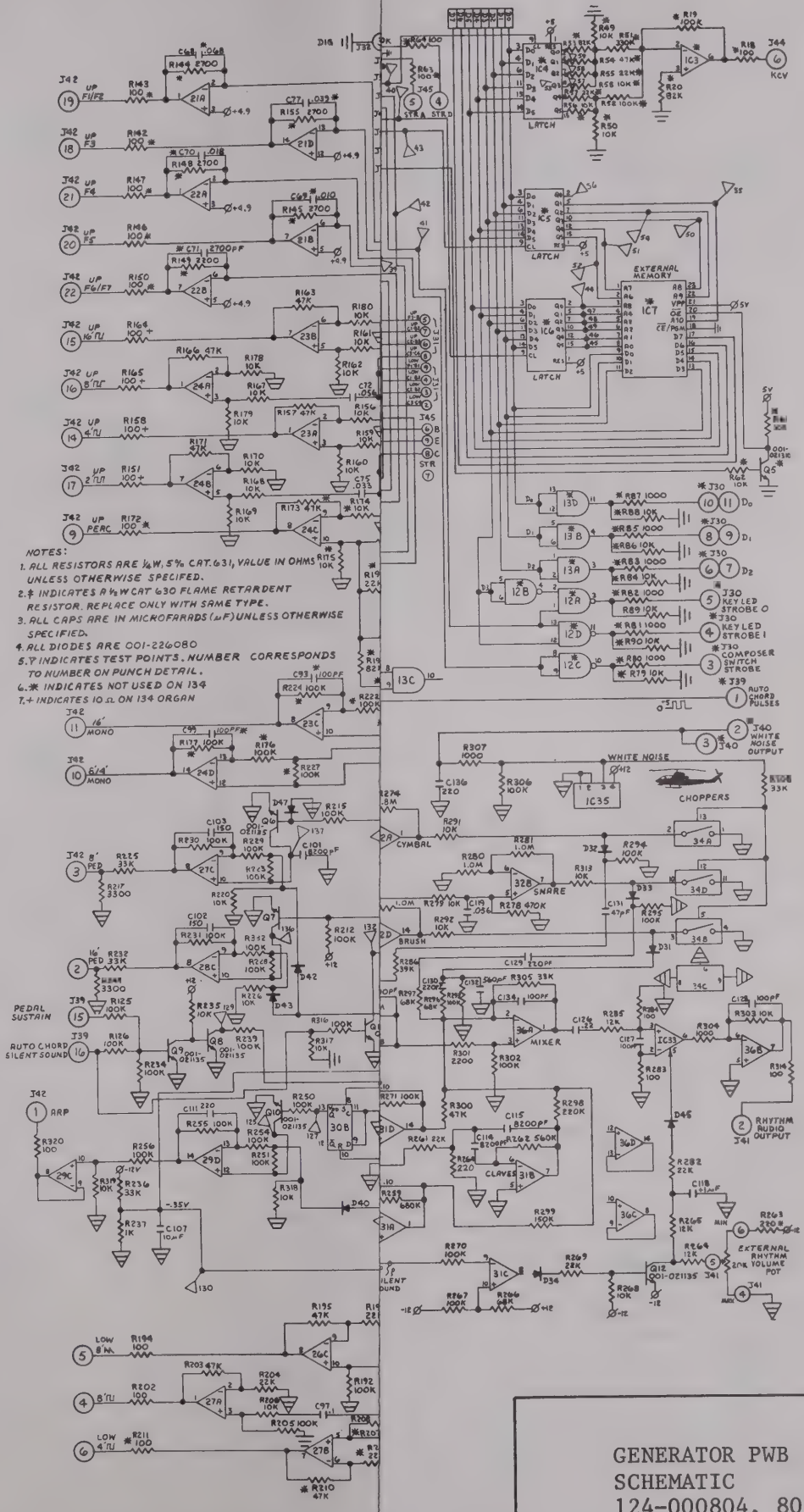


Q1, Q2, Q3, Q6	001-021340
Q4	001-022120
Q5	001-021350
Q7	001-021370
Q8	001-022140
D1, D2	001-226080

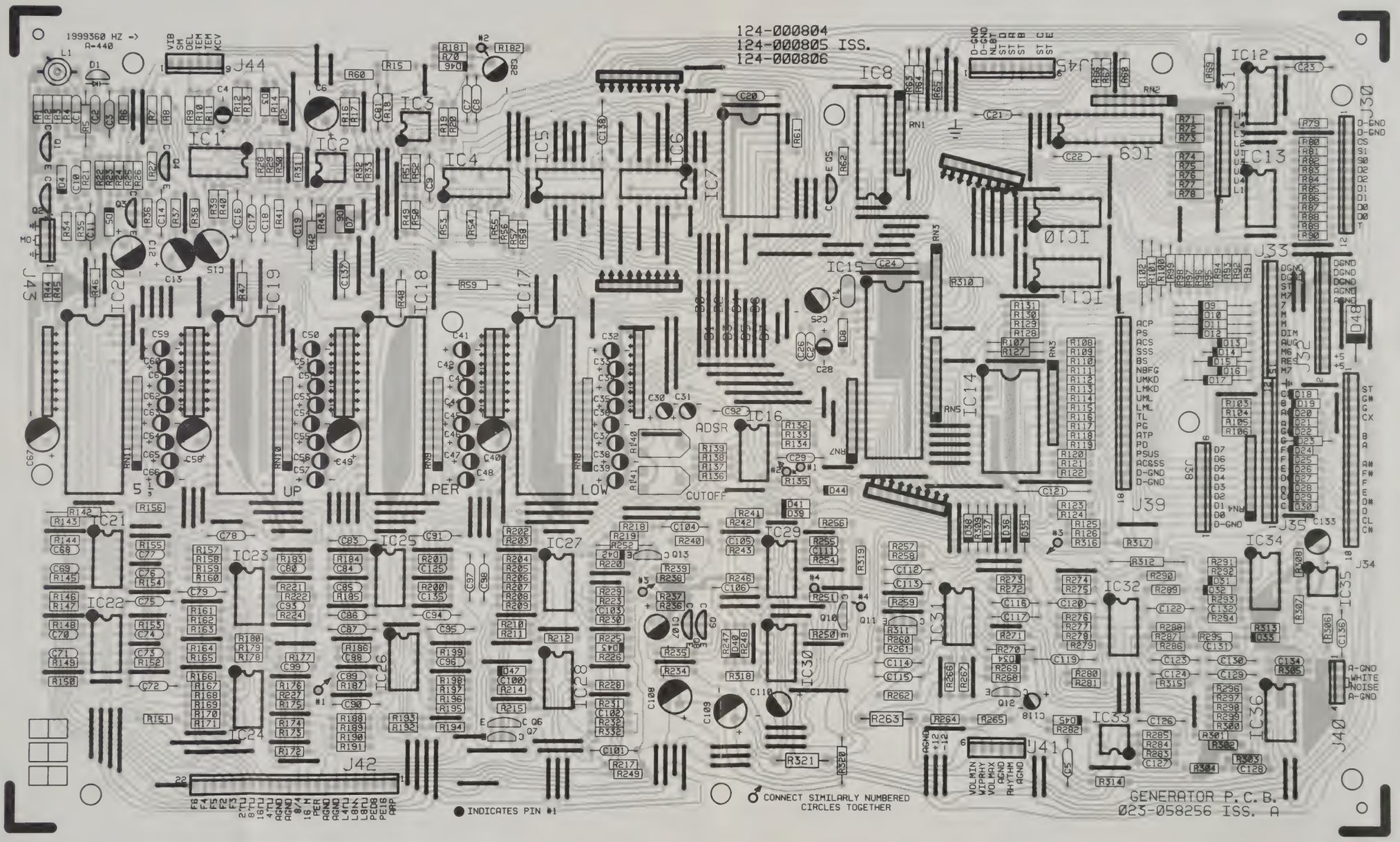


POWER AMP PWB
SCHEMATIC & LAYOUT
124-000703, 704 EXP


124-000804
124-000805 ISS.
124-000806
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC29
IC30
IC31
IC32
IC33
IC34
IC35
IC36
J45
J30
J31
J32
J33
J34
J35
J38
J39
J40
J41
RN1
RN2
RN3
RN4
RN5
RN7
D-GND
D-GND
NLBT
ST D
ST B
ST C
ST E
ACP
PS
ACS
SSS
BS
NBFG
UMKD
LMKD
UML
LML
TL
PG
ATP
PD
PSUS
AC&SS
D-GND
D-GND
DGND
DGND
CS
S1
S0
D2
D2
D1
D1
D0
D0
T
DGND
DGND
DGND
AGND
AGND
+5
+5
A-GND
WHITE NOISE
A-GND
VOLMIN
WIPRHY
VOLMAX
AGND
RHYTHM
AGND
AGND
+12
-12
CONNECT SIMILARLY NUMBERED CIRCLES TOGETHER
GENERATOR P.C.B.
023-058256 ISS. A


NOTES:
1. ALL RESISTORS ARE ¼W, 5% CAT. 631, VALUE IN OHMS UNLESS OTHERWISE SPECIFED.
2. * INDICATES A ½W CAT 630 FLAME RETARDENT RESISTOR. REPLACE ONLY WITH SAME TYPE.
3. ALL CAPS ARE IN MICROFARADS (μF) UNLESS OTHERWISE SPECIFIED.
4. ALL DIODES ARE 001-226080
5. ▽ INDICATES TEST POINTS. NUMBER CORRESPONDS TO NUMBER ON PUNCH DETAIL.
6. * INDICATES NOT USED ON 134
7. + INDICATES 10 Ω ON 134 ORGAN
LATCH
EXTERNAL MEMORY
WHITE NOISE
CHOPPERS
SNARE
CYMBAL
BRUSH
MIXER
CLAVES
PEDAL SUSTAIN
AUTO CHORD SILENT SOUND
RHYTHM AUDIO OUTPUT
EXTERNAL RHYTHM VOLUME POT
AUTO CHORD PULSES
COMPOSER SWITCH STROBE
KEY LED STROBE 0
KEY LED STROBE 1
WHITE NOISE OUTPUT

GENERATOR PWB
SCHEMATIC
124-000804, 805



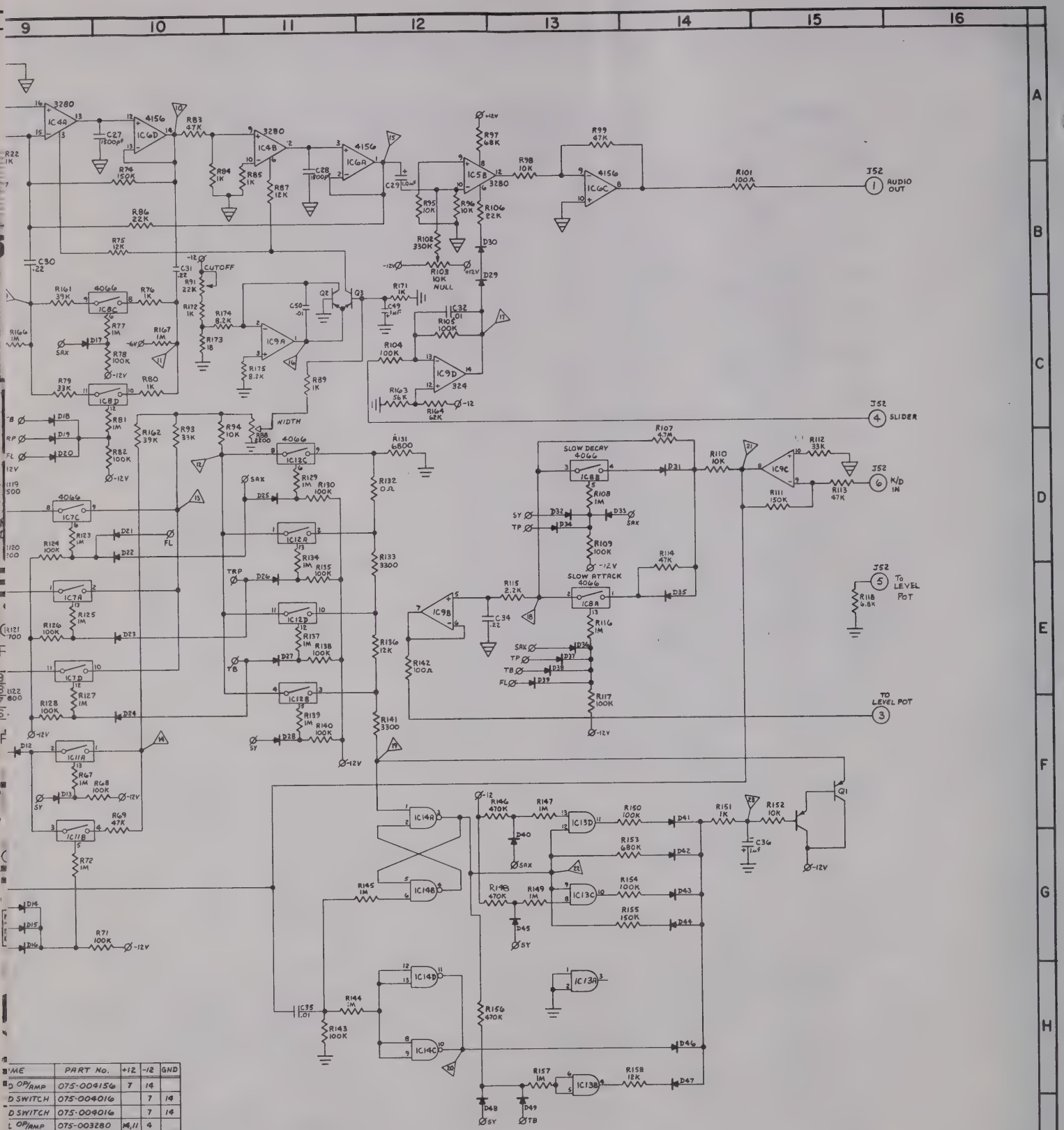
GENERATOR PWB
LAYOUT
124-000804, 805

NOTES:
1. ALL RESISTORS ARE ¼W, 5%, CAT 631, VALUE IN OHMS UNLESS OTHERWISE SPECIFIED.
2. # INDICATES R ¼W CAT 630 FLAME RETARDENT RESISTOR. REPLACE ONLY WITH SAME TYPE.
3. ALL CAPS ARE IN MICROFARADS (μF) UNLESS OTHERWISE SPECIFIED.
4. ALL DIODES ARE 001-226080
5. ▽ INDICATES TEST POINTS. NUMBER CORRESPONDS TO NUMBER ON PUNCH DETAIL.
6. * INDICATES NOT USED ON 134
7. + INDICATES 10 Ω ON 134 ORGAN

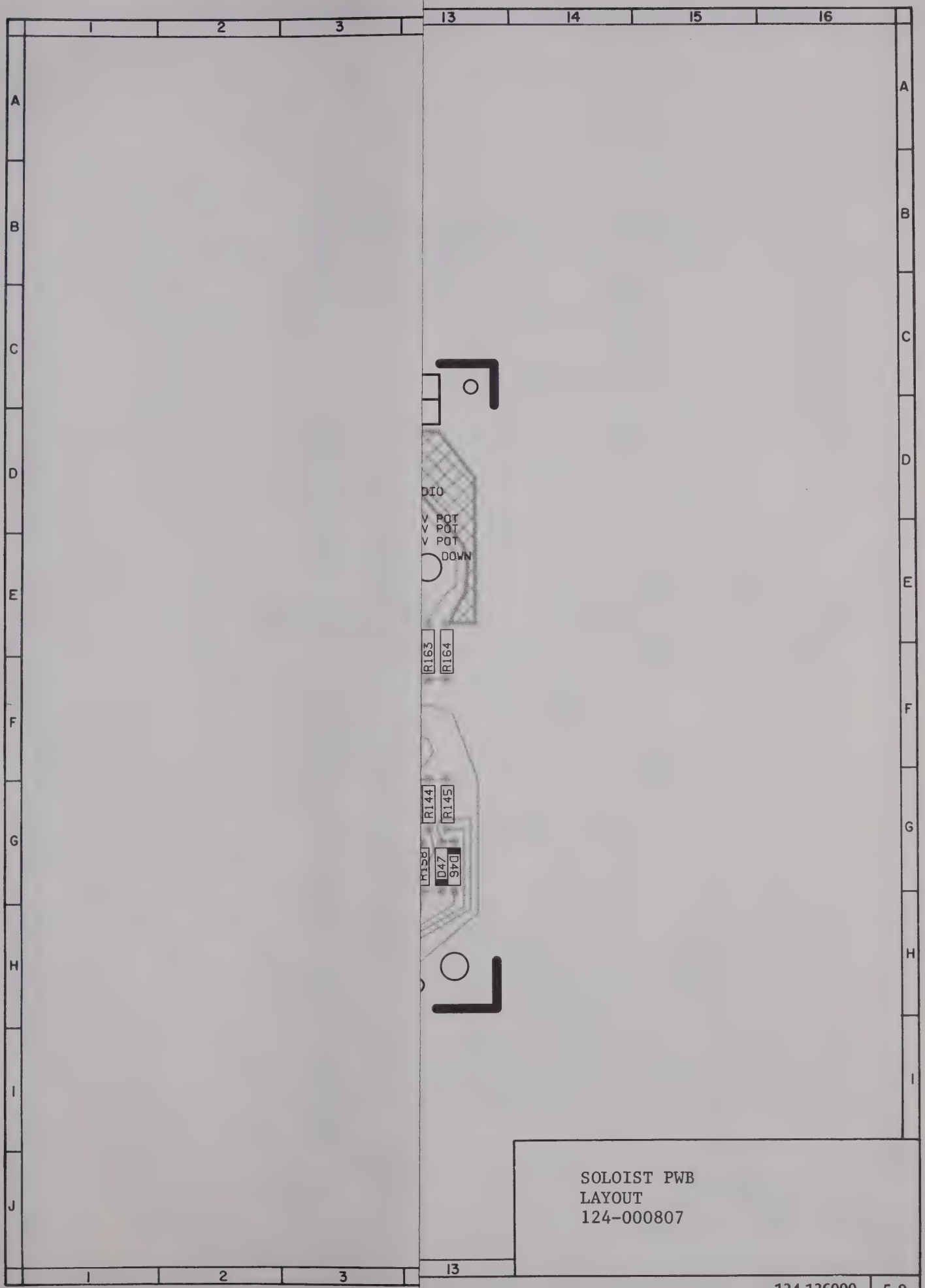
POWER SUPPLY CHART

IC	PART #	+12	-12	+5	GND	IC	PART #	+12	-12	+5	GND
1	075-000324	4			11	21	075-004156	4	11		
2	075-000090	7			6	22	075-004156	4	11		
3#	075-000090	7	4			23	075-004156	4	11		
4#	075-040174			16	8	24	075-004156	4	11		
5#	075-040174			16	8	25	075-004156	4	11		
6#	075-040174			16	8	26	075-004156	4	11		
7#	075-000826			24	12	27	075-004156	4	11		
8#	075-744516			24	12	28	075-004156	4	11		
9	075-744516			24	12	29	075-000084	4	11		
10	075-004503			16	8	30	075-004013			14	7
11	075-004503			16	8	31	075-000084	4	11		
12#	075-004011			14	7	32	075-004156	4	11		
13#	075-004081			14	7	33	075-003080	7	4		
14	075-008243			24	12	34	075-004016	14			7
15	075-000825#820			16	20	35	075-000300	4			½
16	075-000324	4	11			36	075-004156	4	11		
17	075-000112	½		25	½						
18#	075-000112	½		25	½						
19	075-000112	½		25	½						
20#	075-000112	½		25	½						

GENERATOR PWB
SCHEMATIC
124-000804, 805



NAME	PART No.	+12	-12	GND
D OP/AMP	075-004156	7	14	
D SWITCH	075-004016		7	14
D SWITCH	075-004016		7	14
L OP/AMP	075-003280	14,11	4	
L OP/AMP	075-003280	14,11	4	
D OP/AMP	075-004156	4	11	
D SWITCH	075-004066		7	14
D SWITCH	075-004066		7	14
D OP/AMP	075-000324	4	11	
P/AMP	075-000741		4	7
D SWITCH	075-004066		7	14
D SWITCH	075-004066		7	14
D AND	075-004081		7	14
D NAND	075-004011		7	14


1
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14
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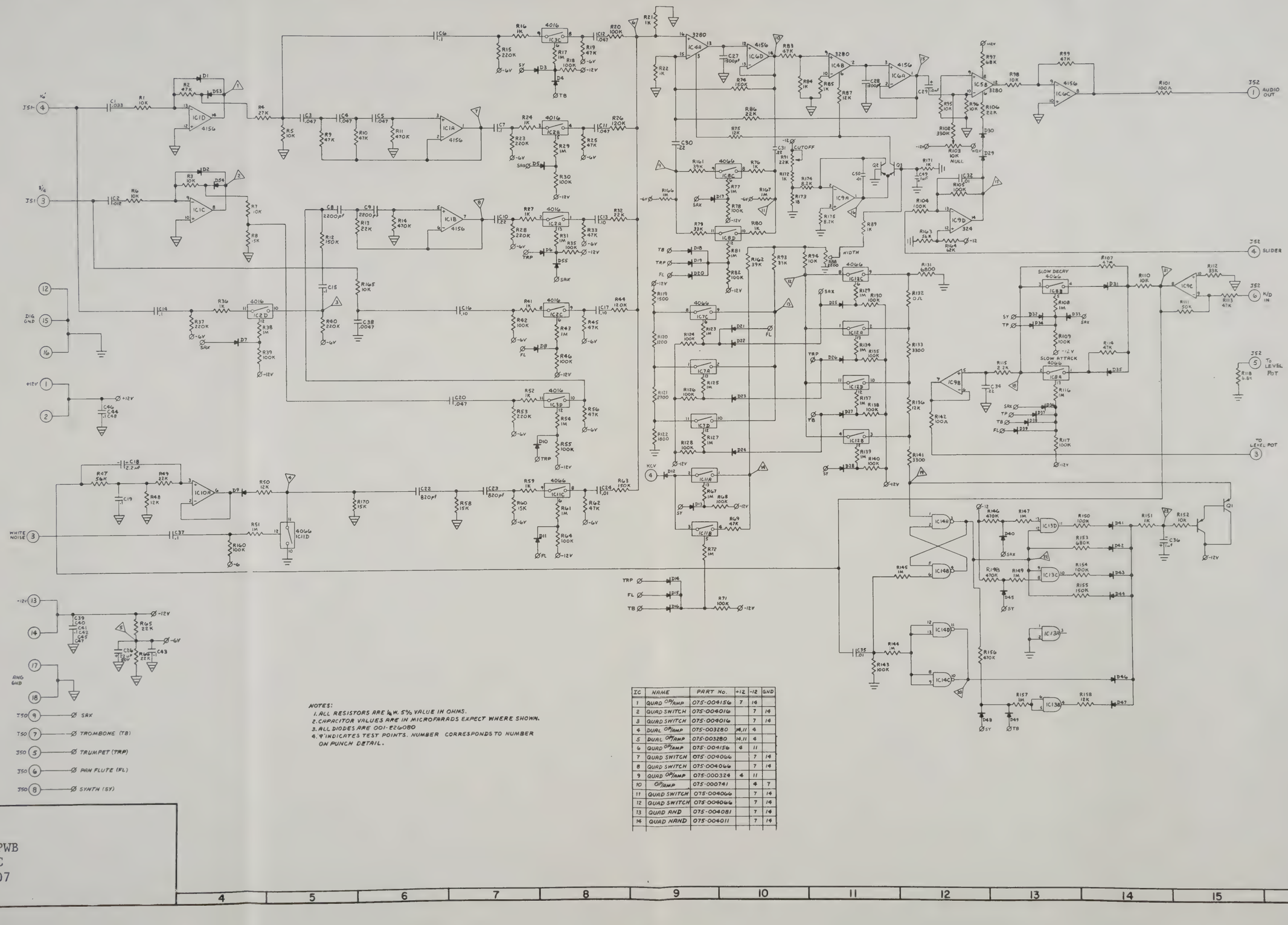
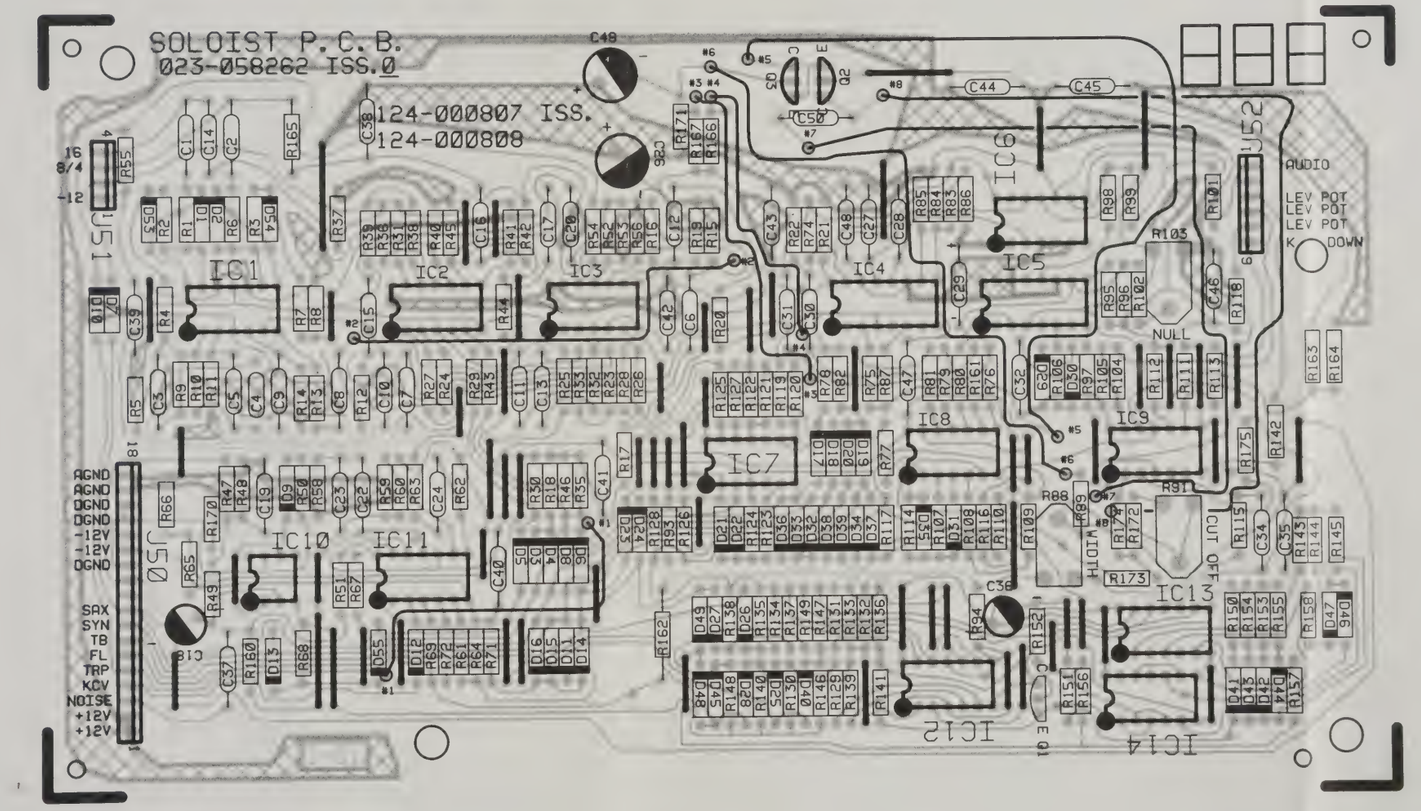
16
A
B
C
D
E
F
G
H
I
J
DIO
POT
POT
POT
DOWN
R163
R164
R144
R145
R158
D47
D46
SOLOIST PWB
LAYOUT
124-000807



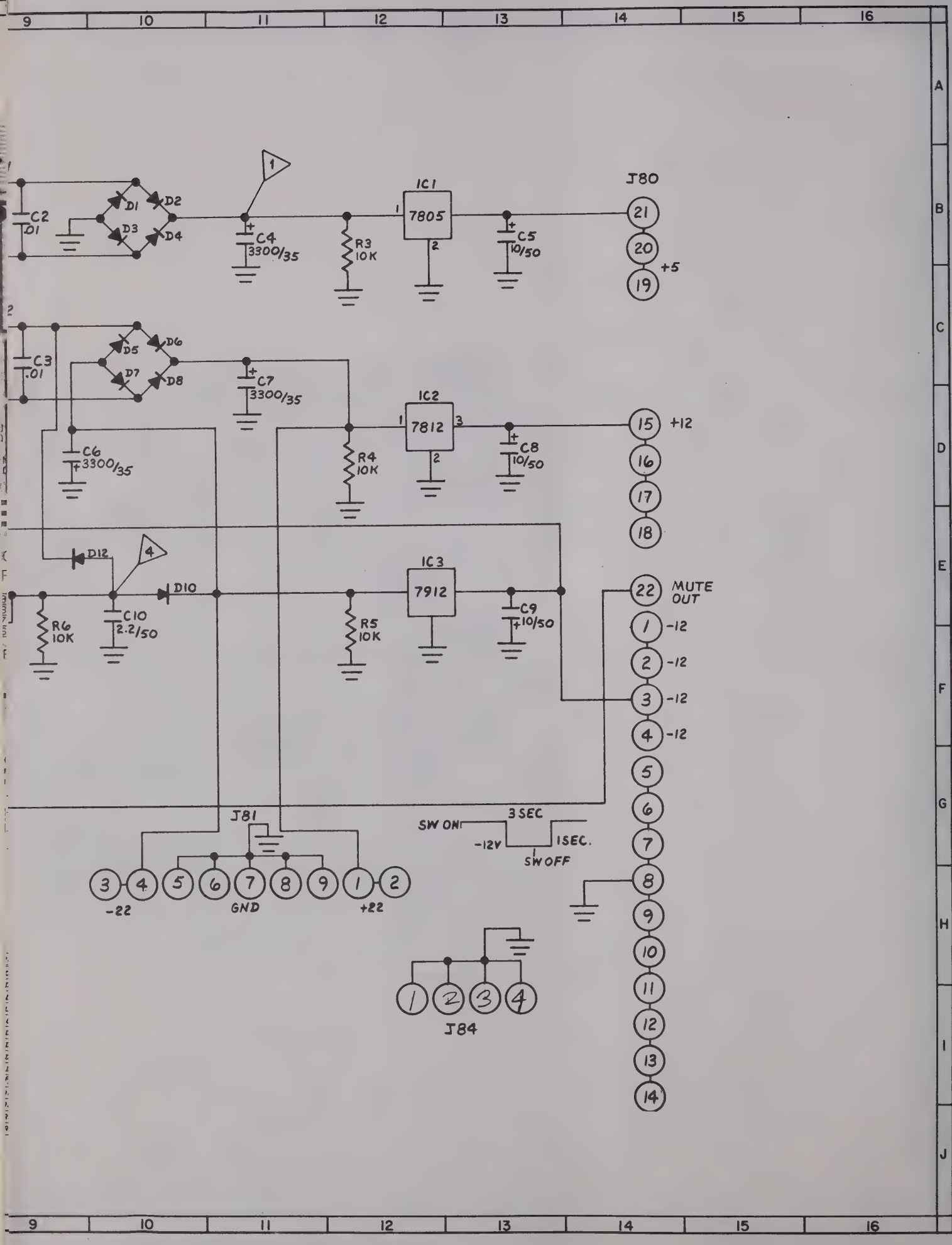
NOTES:
1. ALL RESISTORS ARE 1/4W. 5% VALUE IN OHMS.
2. CAPACITOR VALUES ARE IN MICROFARADS EXPECT WHERE SHOWN.
3. ALL DIODES ARE 001-E2G080
4. Ø INDICATES TEST POINTS. NUMBER CORRESPONDS TO NUMBER ON PUNCH DETAIL.

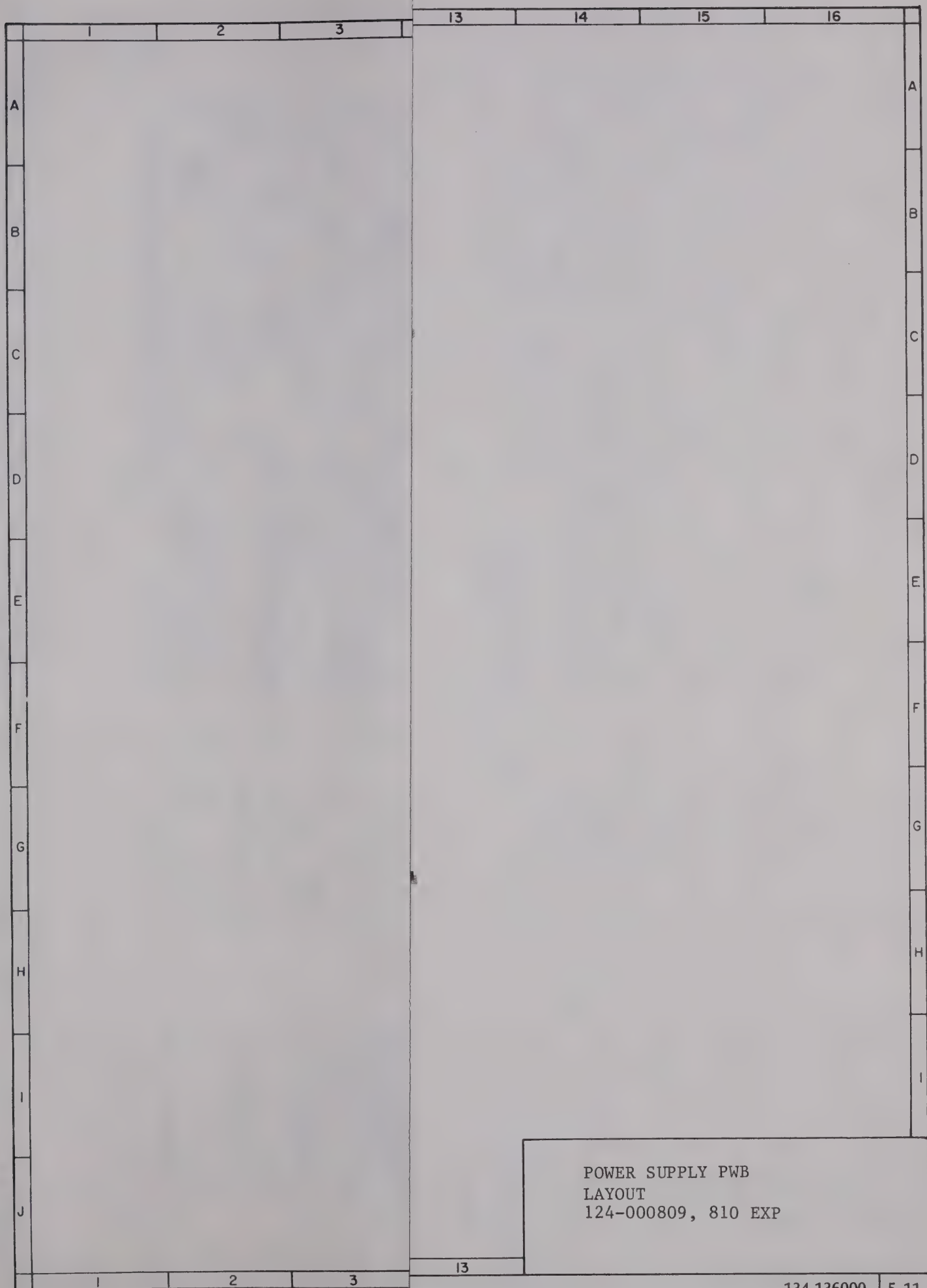
IC	NAME	PART No.	+12	-12	GND
1	QUAD OP/AMP	075-004156	7	14	
2	QUAD SWITCH	075-004016		7	14
3	QUAD SWITCH	075-004016		7	14
4	DUAL OP/AMP	075-003280	8,11	4	
5	DUAL OP/AMP	075-003280	8,11	4	
6	QUAD OP/AMP	075-004156	4	11	
7	QUAD SWITCH	075-004066		7	14
8	QUAD SWITCH	075-004066		7	14
9	QUAD OP/AMP	075-000324	4	11	
10	OP/AMP	075-000741		4	7
11	QUAD SWITCH	075-004066		7	14
12	QUAD SWITCH	075-004066		7	14
13	QUAD AND	075-004081		7	14
14	QUAD NAND	075-004011		7	14

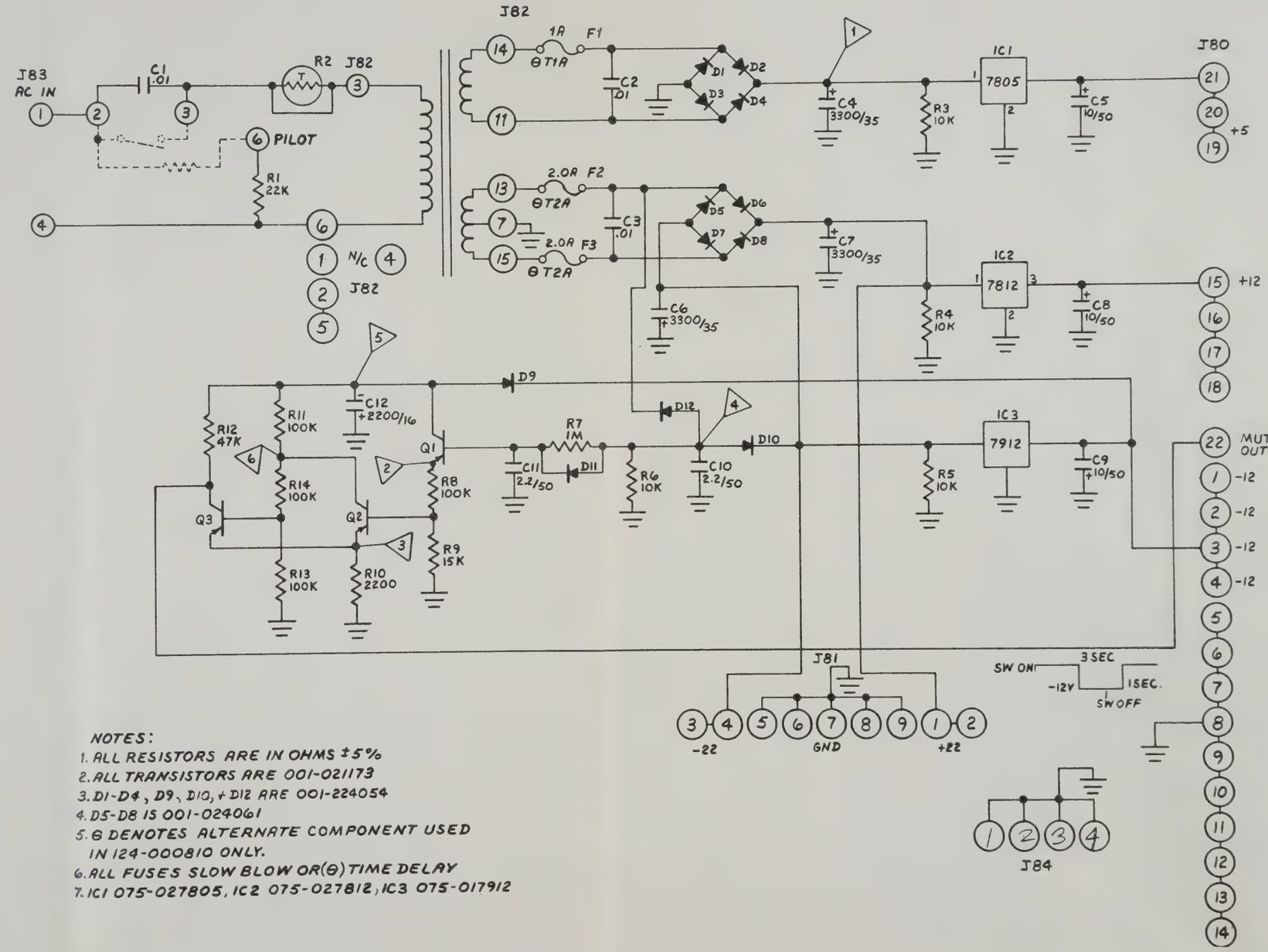
SOLOIST PWB
SCHEMATIC
124-000807



SOLOIST PWB
LAYOUT
124-000807


C2 .01
D1
D2
D3
D4
C4 3300/35
R3 10K
IC1 7805
C5 10/50
J80
21
20
+5
19
C3 .01
D5
D6
D7
D8
C7 3300/35
C6 3300/35
IC2 7812
R4 10K
C8 10/50
15 +12
16
17
18
D12
D10
C10 2.2/50
R6 10K
IC3 7912
R5 10K
C9 10/50
22 MUTE OUT
1 -12
2 -12
3 -12
4 -12
5
6
7
8
9
10
11
12
13
14
J81
3 4 5 6 7 8 9 1 2
-22
GND
+22
SW ON
3 SEC
-12V
1 SEC.
SW OFF
J84
1 2 3 4


1
2
3
13
14
15
16
A
B
C
D
E
F
G
H
I
J
POWER SUPPLY PWB
LAYOUT
124-000809, 810 EXP

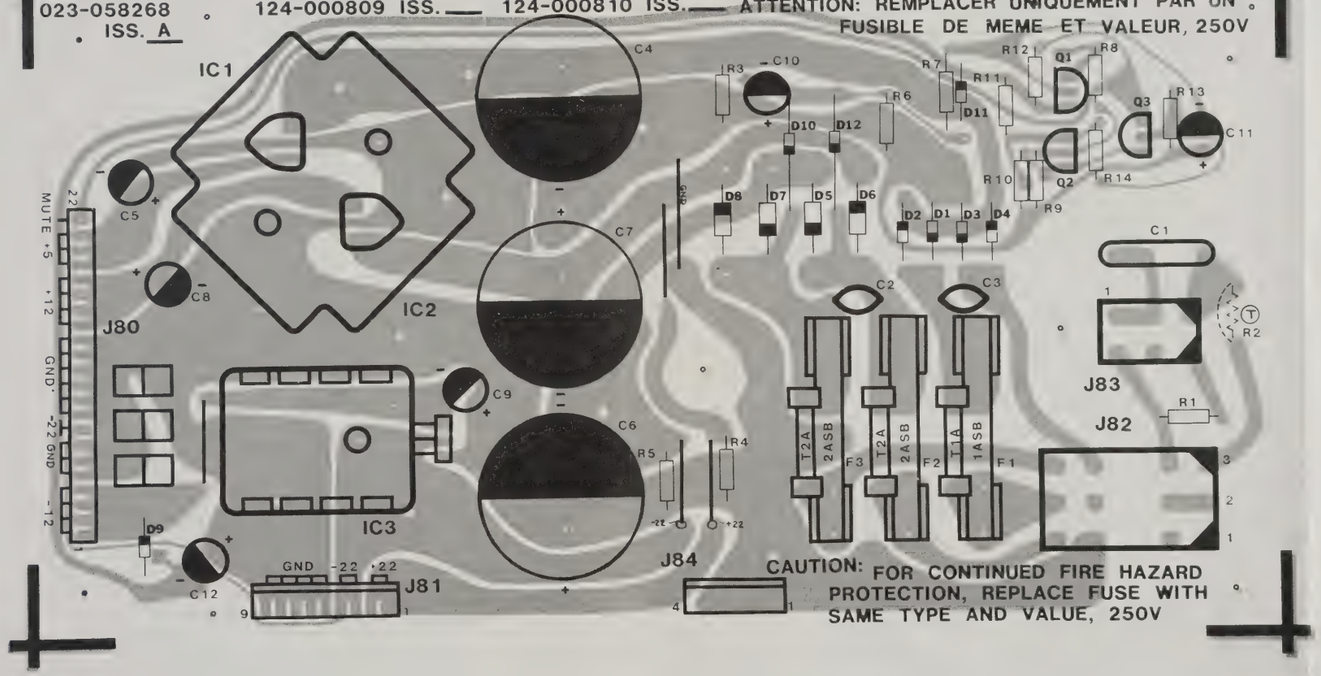


NOTES:

1. ALL RESISTORS ARE IN OHMS ±5%
2. ALL TRANSISTORS ARE 001-021173
3. D1-D4, D9, D10, & D12 ARE 001-224054
4. D5-D8 IS 001-024061
5. 6 DENOTES ALTERNATE COMPONENT USED IN 124-000810 ONLY.
6. ALL FUSES SLOW BLOW OR(θ) TIME DELAY
7. IC1 075-027805, IC2 075-027812, IC3 075-017912

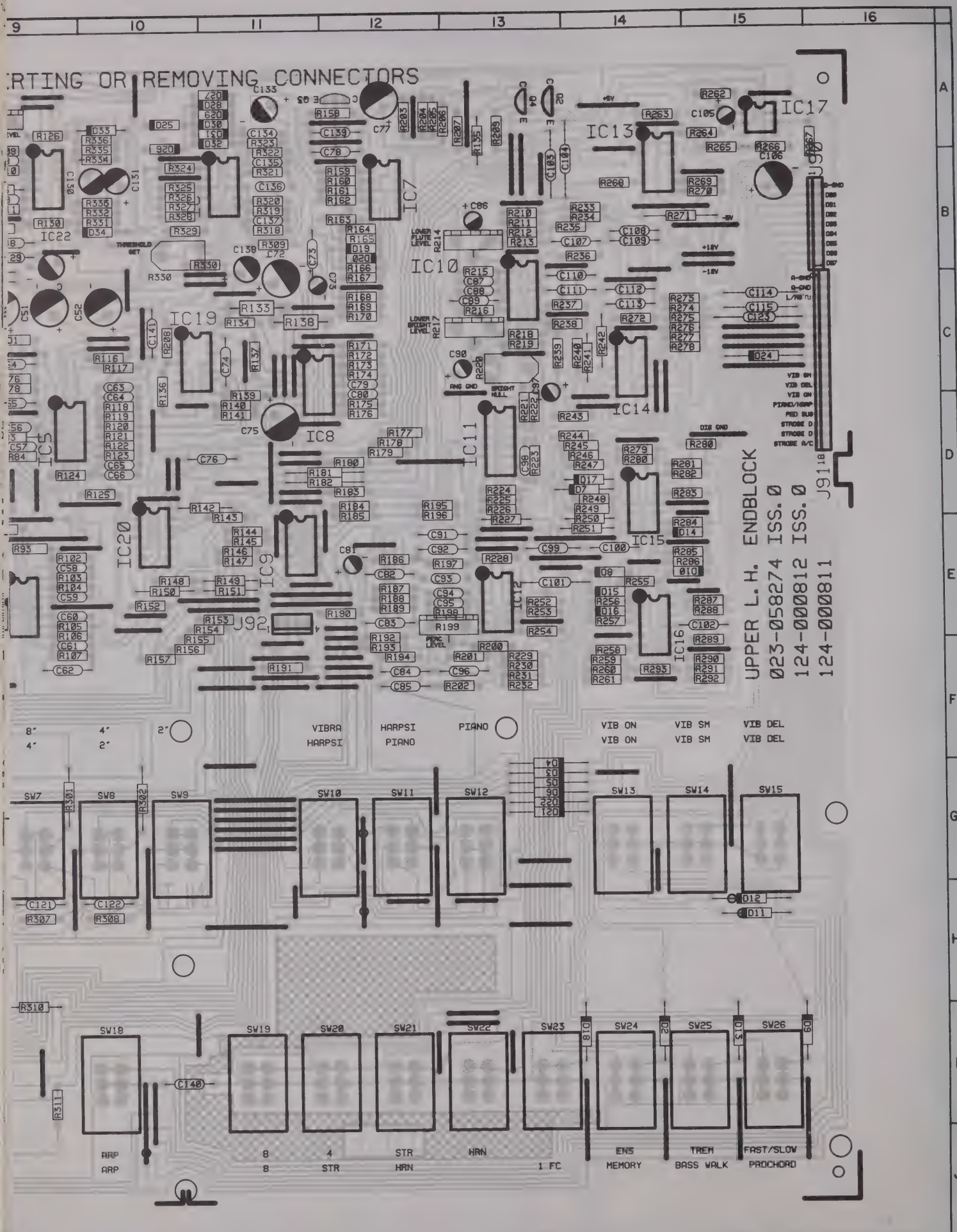
POWER SUPPLY PWB
SCHEMATIC
124-000809, 810 EXP

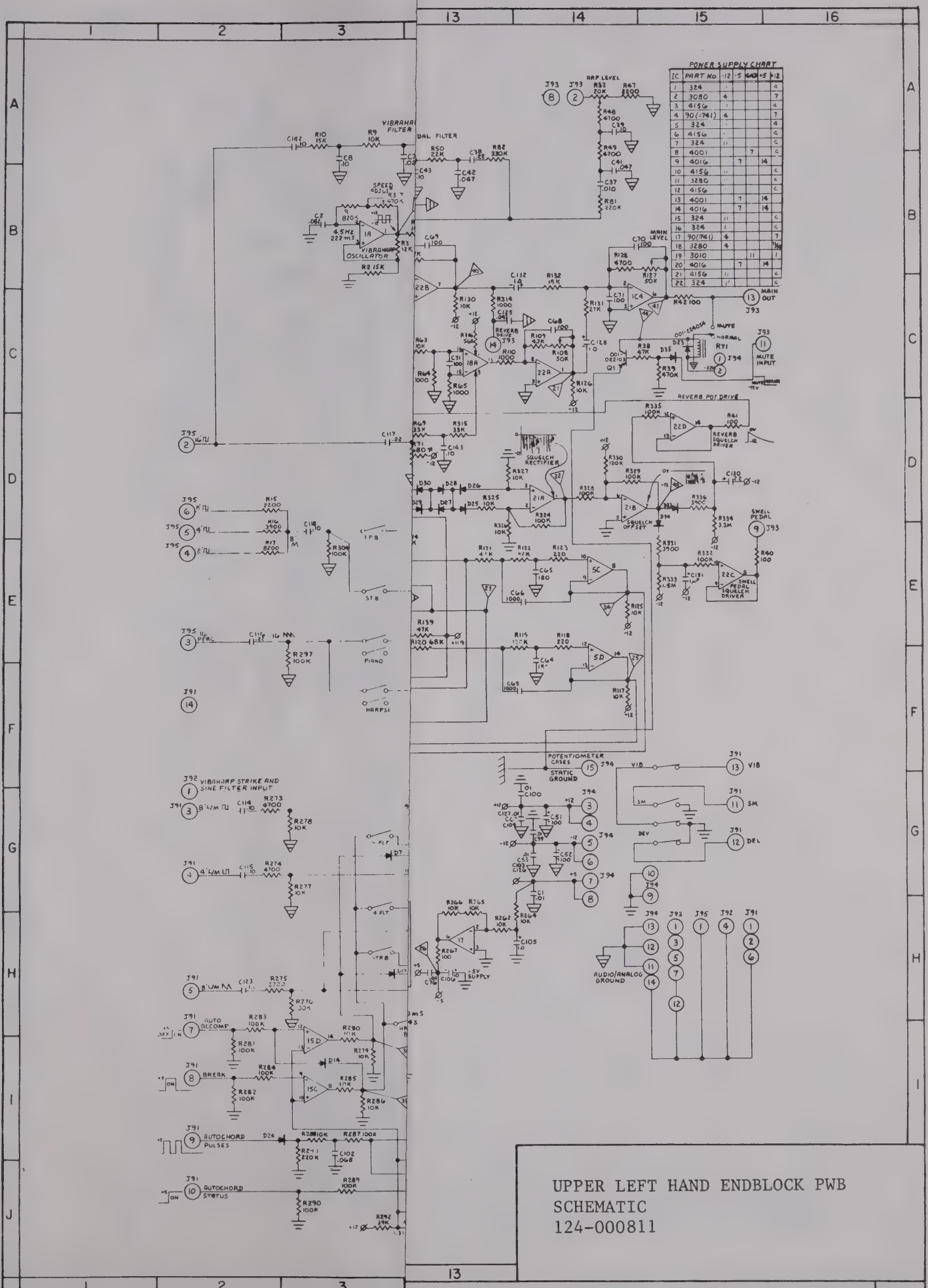
023-058268 ISS. A 124-000809 ISS. — 124-000810 ISS. — ATTENTION: REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME ET VALEUR, 250V



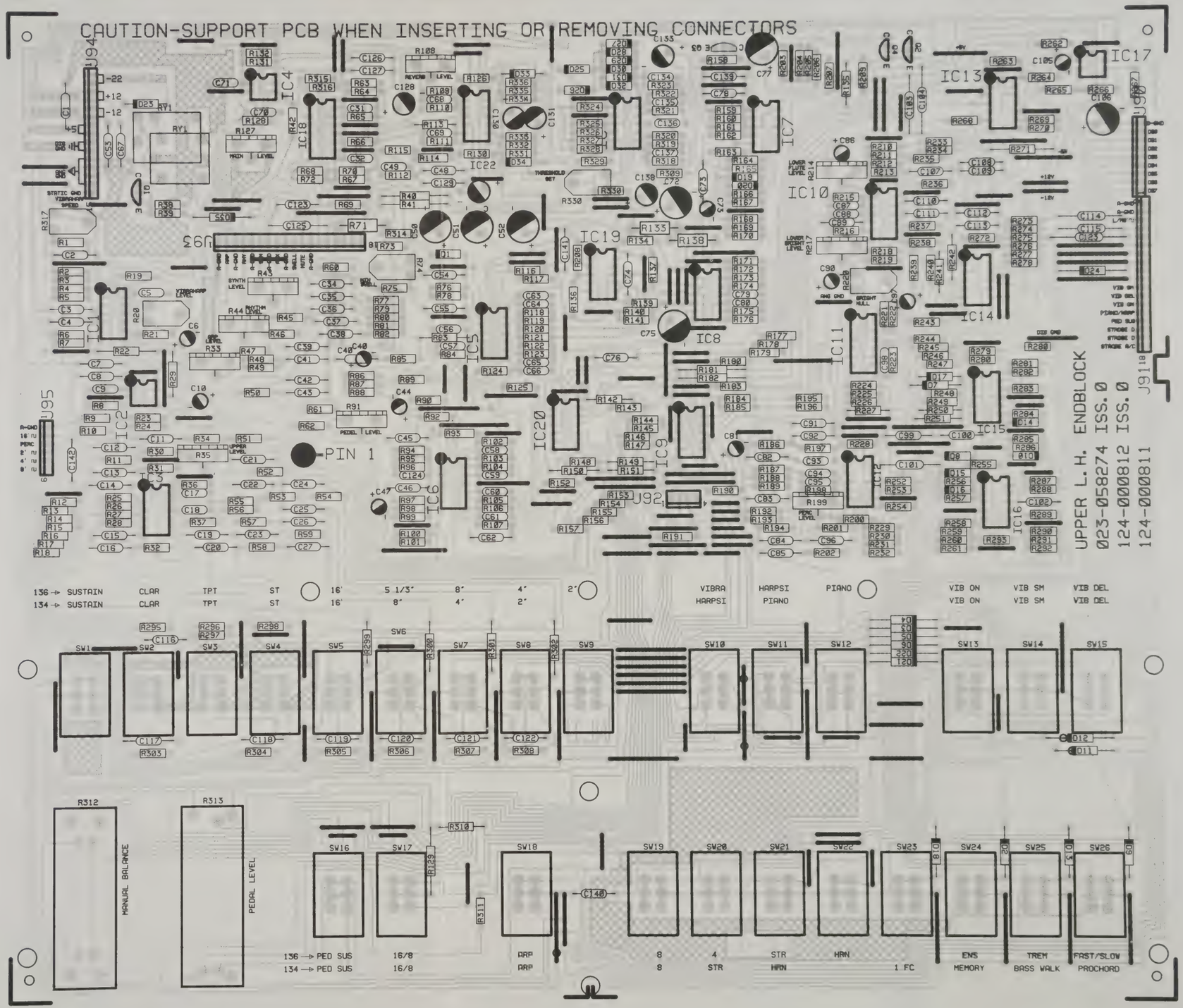
CAUTION: FOR CONTINUED FIRE HAZARD PROTECTION, REPLACE FUSE WITH SAME TYPE AND VALUE, 250V

POWER SUPPLY PWB
LAYOUT
124-000809, 810 EXP

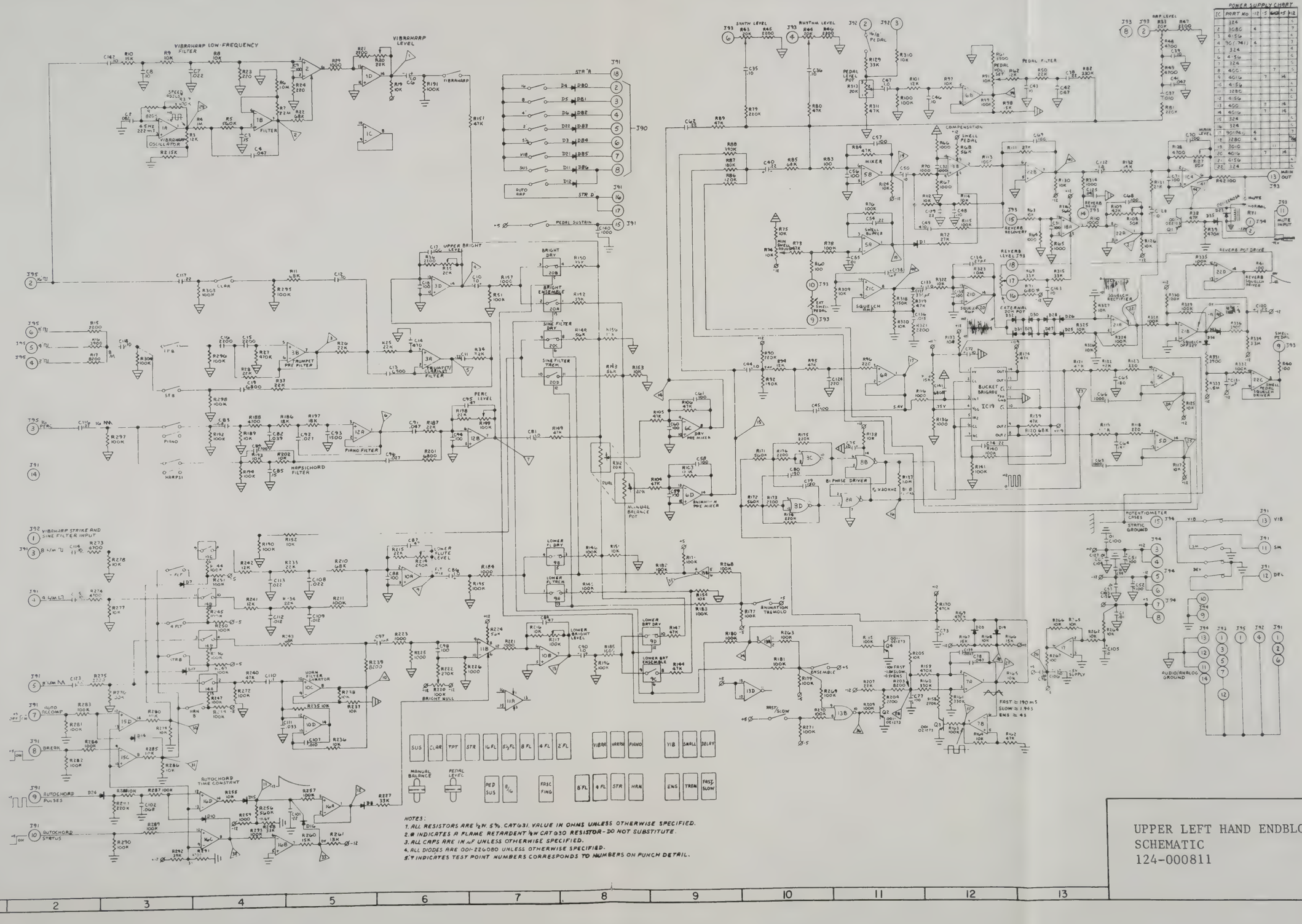

RTING OR REMOVING CONNECTORS
IC22
IC19
IC5
IC20
IC9
IC8
IC7
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
J92
J91
UPPER L.H. ENDBLOCK
023-058274 ISS.0
124-000812 ISS.0
124-000811
8'
4'
2'
VIBRA
HARPSI
PIANO
VIB ON
VIB SM
VIB DEL
SW7
SW8
SW9
SW10
SW11
SW12
SW13
SW14
SW15
SW18
SW19
SW20
SW21
SW22
SW23
SW24
SW25
SW26
ARP
8
4
STR
HRN
1 FC
ENS
MEMORY
TREM
BASS WALK
FAST/SLOW
PROCHORD


POWER SUPPLY CHART
IC | PART No | -12 | -5 | GND | +5 | +12
1 | 324 | | | | | 4
2 | 3080 | 4 | | | | 7
3 | 4156 | " | | | | 4
4 | 90(-741) | 4 | | | | 7
5 | 324 | " | | | | 4
6 | 4156 | " | | | | 4
7 | 324 | " | | | | 4
8 | 4001 | | | | 7 | 4
9 | 4016 | | 7 | | 14 | 4
10 | 4156 | " | | | | 4
11 | 3280 | " | | | | 4
12 | 4156 | " | | | | 4
13 | 4001 | | 7 | | 14 | 4
14 | 4016 | | 7 | | 14 | 4
15 | 324 | " | | | | 4
16 | 324 | " | | | | 4
17 | 90(741) | 4 | | | | 7
18 | 3280 | 4 | | | | 4
19 | 3010 | " | | | 11 | 1
20 | 4016 | | 7 | | 14 | 4
21 | 4156 | " | | | | 4
22 | 324 | " | | | | 4
VIBRAHARP FILTER
DAL FILTER
SPEED ADJUST
4.5MHZ 222mS
VIBRAHARP OSCILLATOR
ARP LEVEL
MAIN LEVEL
MAIN OUT
REVERB DRIVE
REVERB POT DRIVE
REVERB SQUELCH DRIVER
SQUELCH RECTIFIER
SQUELCH OFFSET
SWELL PEDAL
SWELL PEDAL SQUELCH DRIVER
MUTE
NORMAL
MUTE INPUT
TPB
STB
PIANO
HARPSI
VIBRAHARP STRIKE AND SINE FILTER INPUT
FLT
TRB
AUTO ACCOMP
BREAK
AUTOCHORD PULSES
AUTOCHORD STATUS
POTENTIOMETER CASES
STATIC GROUND
-5V SUPPLY
AUDIO/ANALOG GROUND
VIB
SM
DEL
DEV

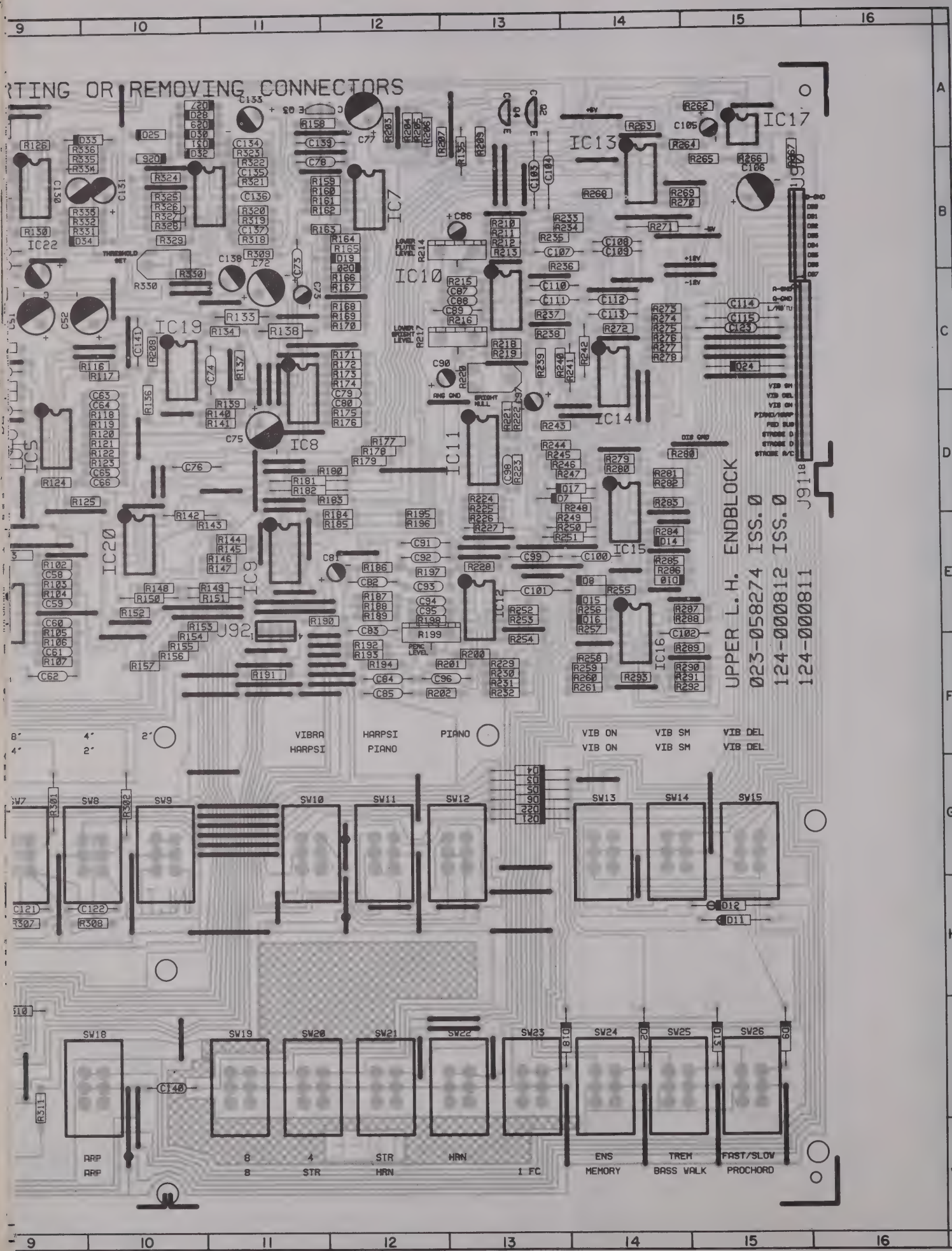
UPPER LEFT HAND ENDBLOCK PWB
SCHEMATIC
124-000811

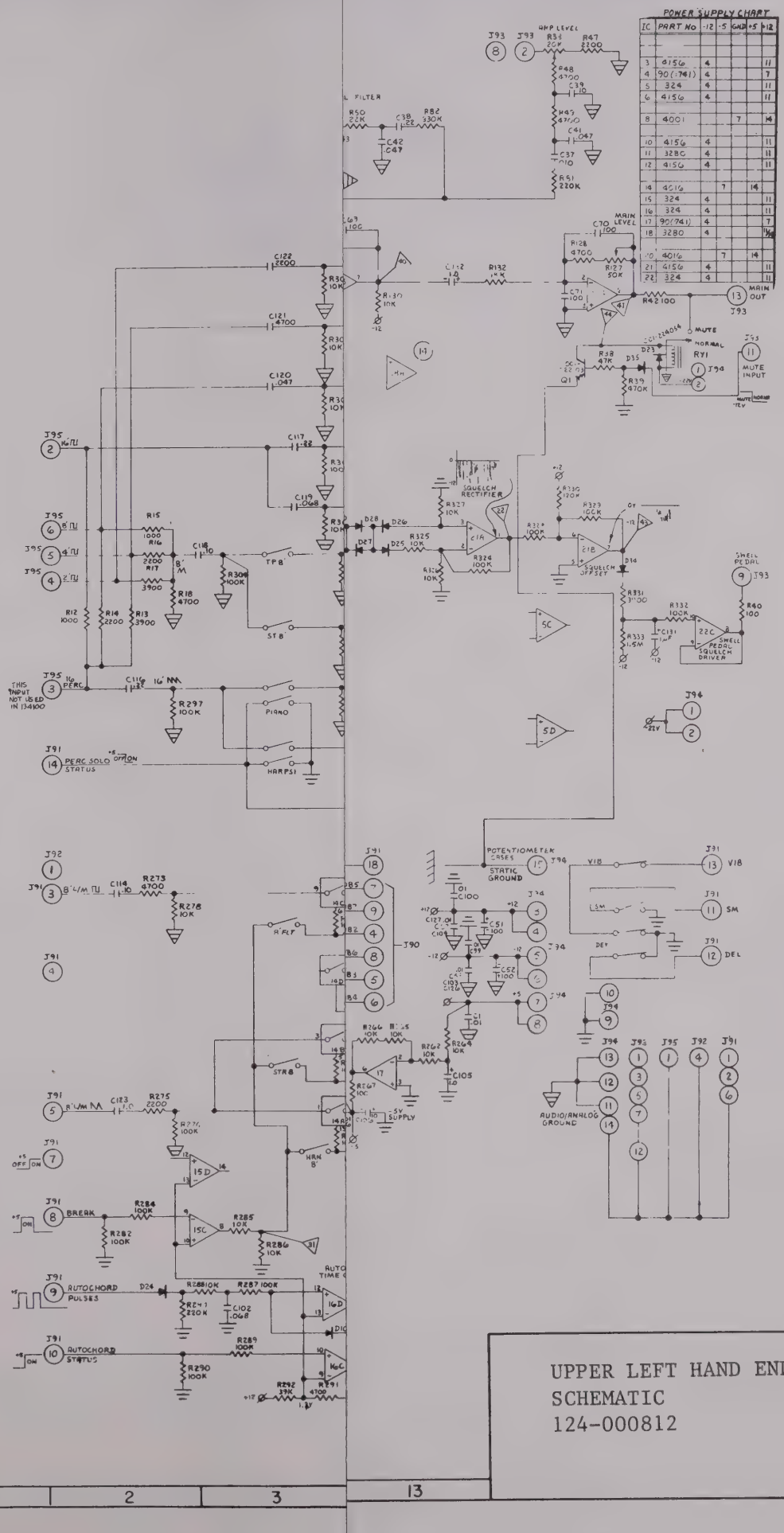

CAUTION-SUPPORT PCB WHEN INSERTING OR REMOVING CONNECTORS
PIN 1
UPPER L.H. ENDBLOCK
023-058274 ISS.0
124-000812 ISS.0
124-000811
136 → SUSTAIN CLAR TPT ST 16' 5 1/3' 8' 4' 2'
134 → SUSTAIN CLAR TPT ST 16' 8' 4' 2'
VIBRA HARPSI PIANO
HARPSI PIANO
VIB ON VIB SM VIB DEL
VIB ON VIB SM VIB DEL
MANUAL BALANCE
PEDAL LEVEL
136 → PED SUS 16/8 ARP 8 4 STR HRN 1 FC MEMORY BASS WALK PROCHORD
134 → PED SUS 16/8 ARP 8 STR HRN

UPPER LEFT HAND ENDBLOCK PWB
LAYOUT
124-000811

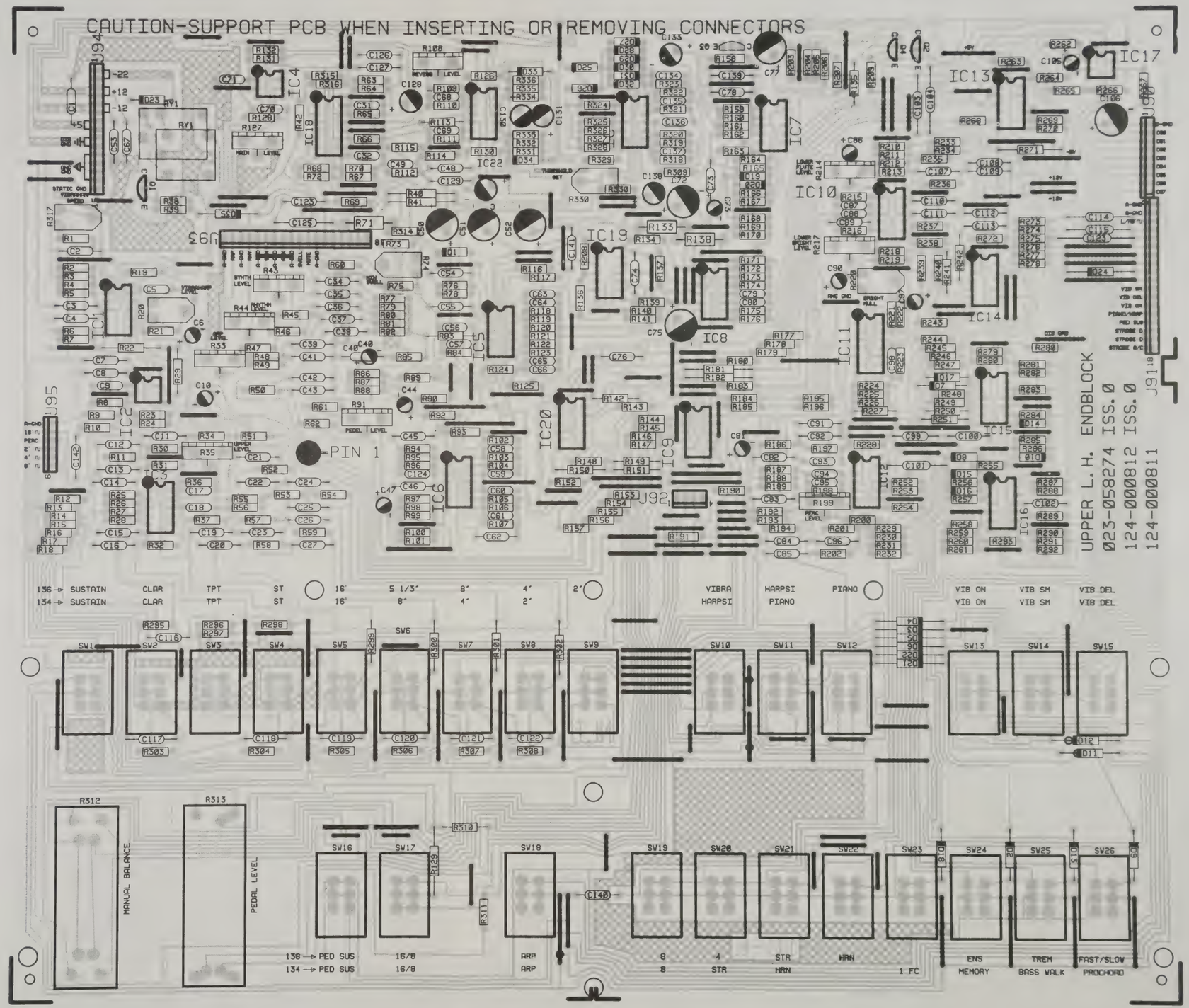


UPPER LEFT HAND ENDBLOCK PWB
SCHEMATIC
124-000811

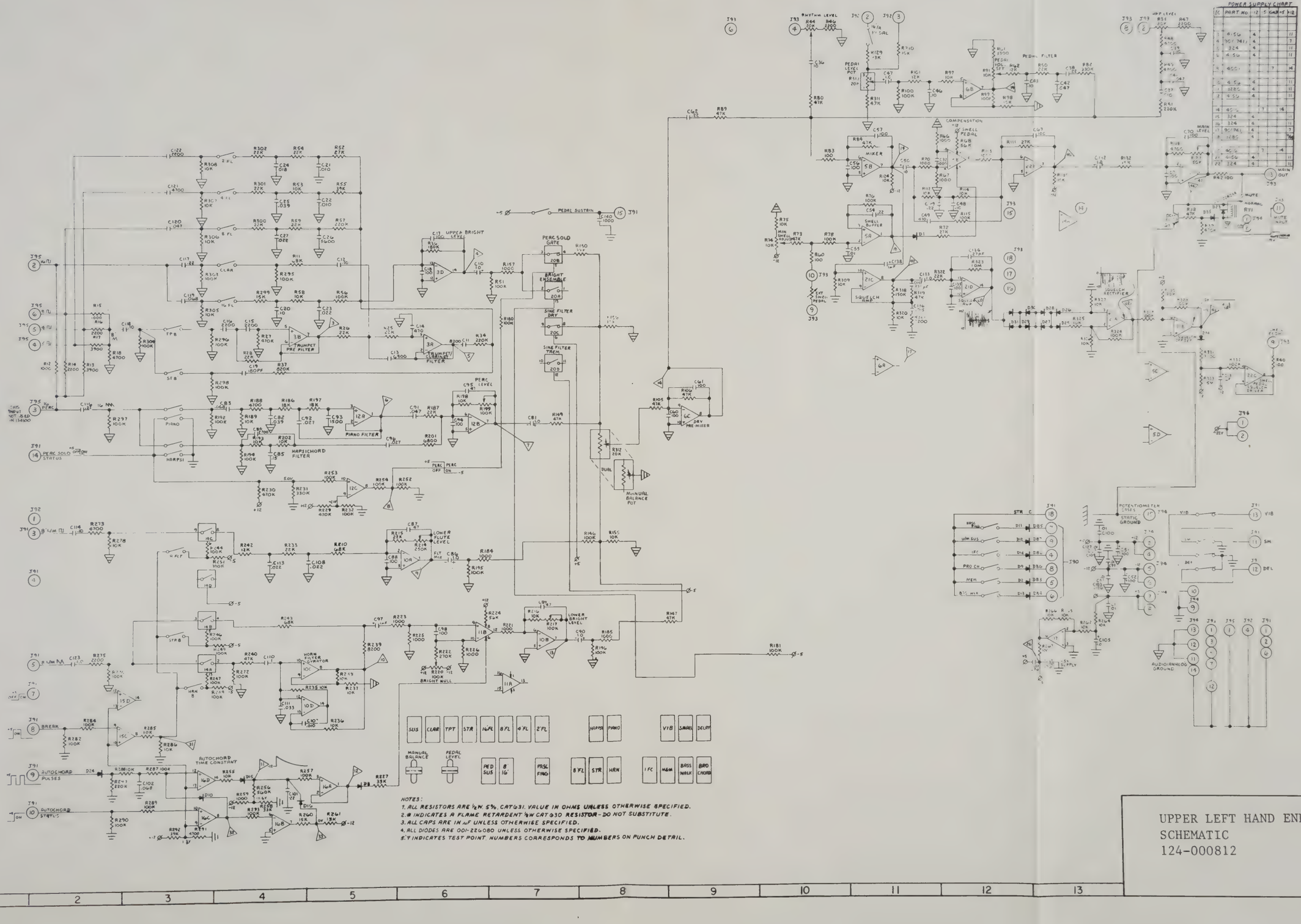

RTING OR REMOVING CONNECTORS
UPPER L.H. ENDBLOCK
023-058274 ISS.0
124-000812 ISS.0
124-000811
VIBRA
HARPSI
PIANO
VIB ON
VIB SM
VIB DEL
ARP
8
4
STR
MAN
1 FC
ENS
MEMORY
TREM
BASS WALK
FAST/SLOW
PROCHORD


POWER SUPPLY CHART
IC | PART NO | -12 | -5 | GND | +5 | +12
3 | 4156 | 4 | | | | 11
4 | 90(741) | 4 | | | | 7
5 | 324 | 4 | | | | 11
6 | 4156 | 4 | | | | 11
8 | 4001 | | | 7 | | 14
10 | 4156 | 4 | | | | 11
11 | 3280 | 4 | | | | 11
12 | 4156 | 4 | | | | 11
14 | 4016 | | | 7 | | 14
15 | 324 | 4 | | | | 11
16 | 324 | 4 | | | | 11
17 | 90(741) | 4 | | | | 7
18 | 3280 | 4 | | | | 11
20 | 4016 | | | 7 | | 14
21 | 4156 | 4 | | | | 11
22 | 324 | 4 | | | | 11
AMP LEVEL
MAIN LEVEL
MAIN OUT
MUTE
MUTE INPUT
SQUELCH RECTIFIER
SQUELCH OFFSET
SWELL PEDAL
SWELL PEDAL SQUELCH DRIVER
PIANO
HARPSI
PERC SOLO STATUS
POTENTIOMETER CASES
STATIC GROUND
AUDIO/ANALOG GROUND
BREAK
AUTOCHORD PULSES
AUTOCHORD STATUS
5V SUPPLY

UPPER LEFT HAND ENDBLOCK PWB
SCHEMATIC
124-000812

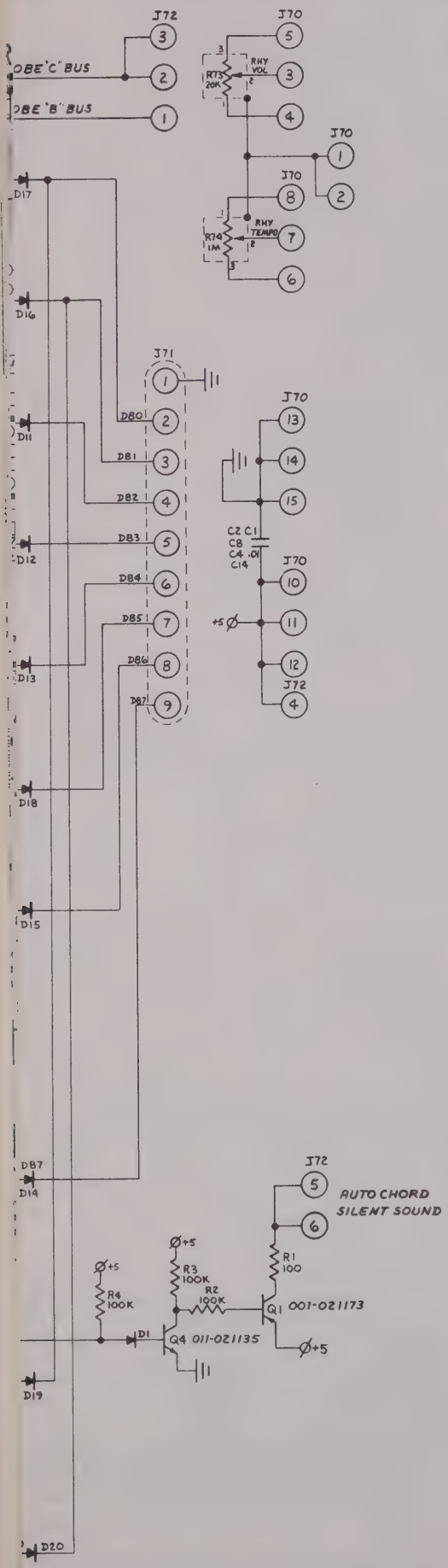


UPPER LEFT HAND ENDBLOCK PWB
LAYOUT
124-000812



NOTES:
1. ALL RESISTORS ARE ½W. 5%, CAT@31. VALUE IN OHMS UNLESS OTHERWISE SPECIFIED.
2. # INDICATES A FLAME RETARDENT ½W CAT@30 RESISTOR - DO NOT SUBSTITUTE.
3. ALL CAPS ARE IN μF UNLESS OTHERWISE SPECIFIED.
4. ALL DIODES ARE 001-226080 UNLESS OTHERWISE SPECIFIED.
5. ▽ INDICATES TEST POINT. NUMBERS CORRESPONDS TO NUMBERS ON PUNCH DETAIL.

UPPER LEFT HAND ENDBLOCK PWB
SCHEMATIC
124-000812

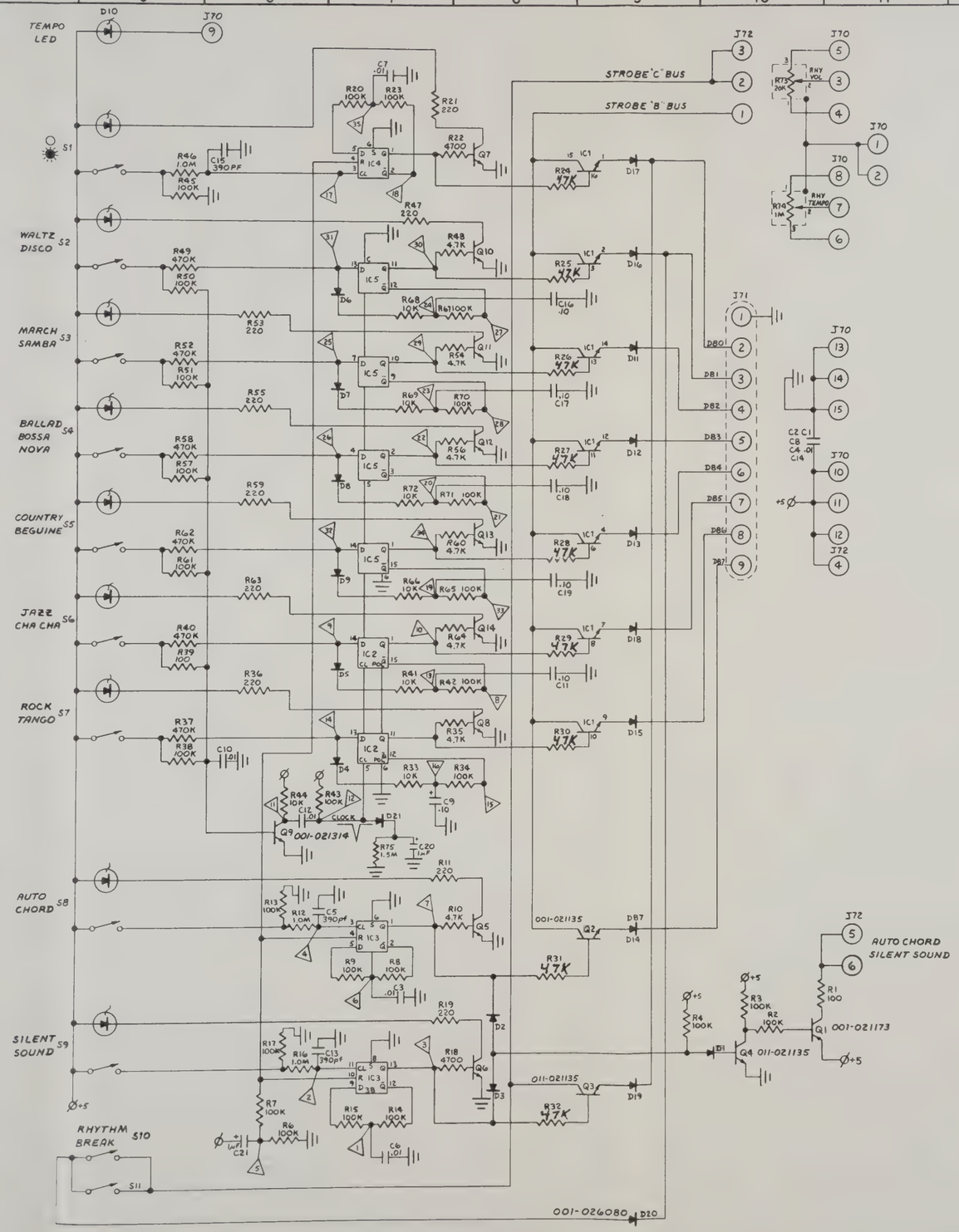


IC	NAME	PART #	+5	GND
1	TRANS ARRAY	075-003082		5
2	QUAD LATCH	075-004042	14	7
3	DUAL DFF	075-004013	14	7
4	DUAL DFF	075-004013	14	7
5	QUAD LATCH	075-004042	14	7

NOTES:

1. Q5-Q14 ARE 001-021314
2. D1-9, D11-D21 ARE 001-026080
3. D10 IS 001-026191
4. ALL RESISTORS ARE ¼W 5% CAT 631 VALUE IN Ω UNLESS OTHERWISE INDICATED.
5. ALL CAPS ARE IN MICROFARADS UNLESS OTHERWISE
6. TESTPOINTS ARE SHOWN BY ∇. NUMBERS CORRESPONDS TO NUMBER ON PUNCH DETAIL.

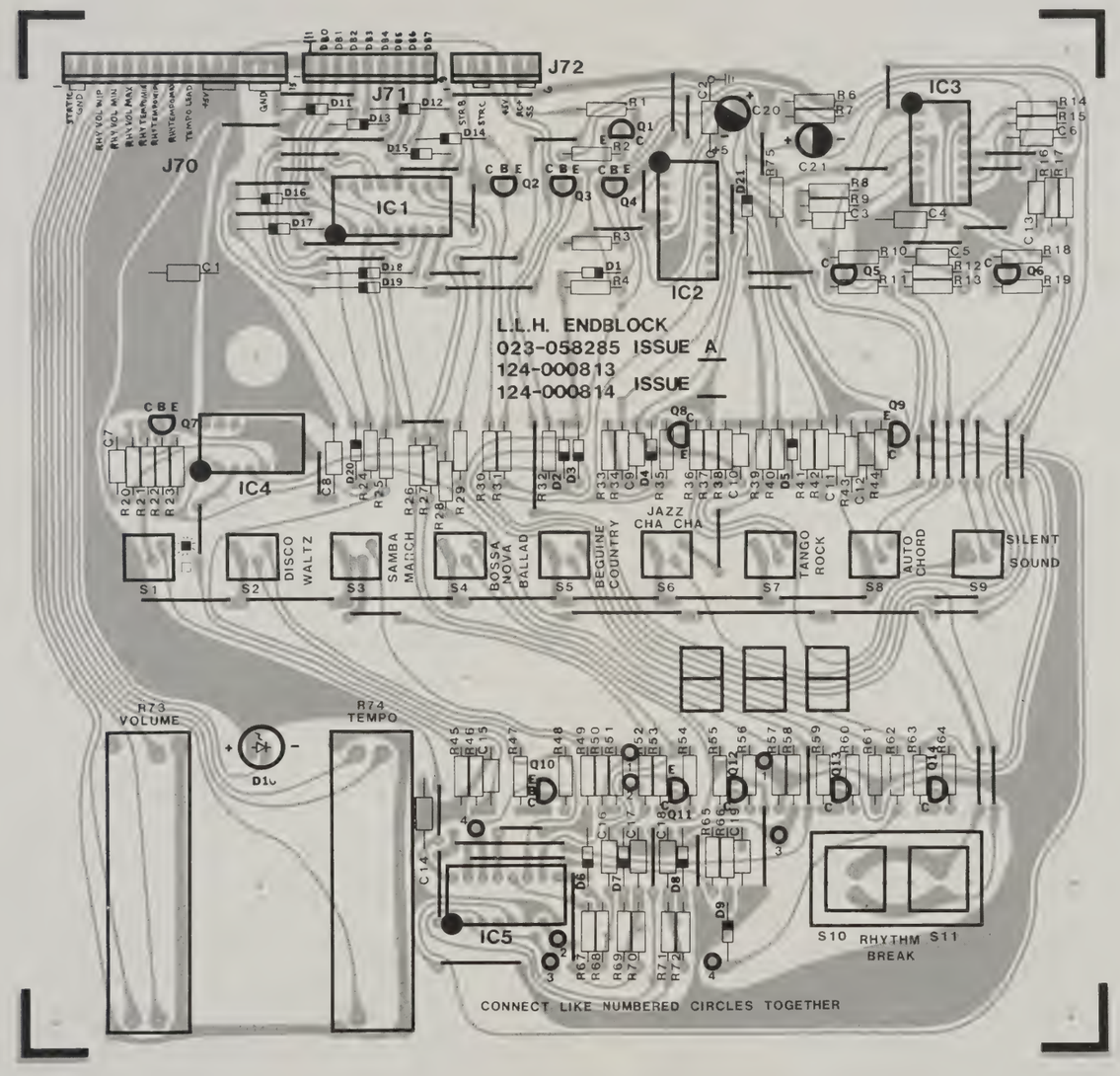
LOWER LEFT HAND ENDBLOCK PWB
LAYOUT
124-000813



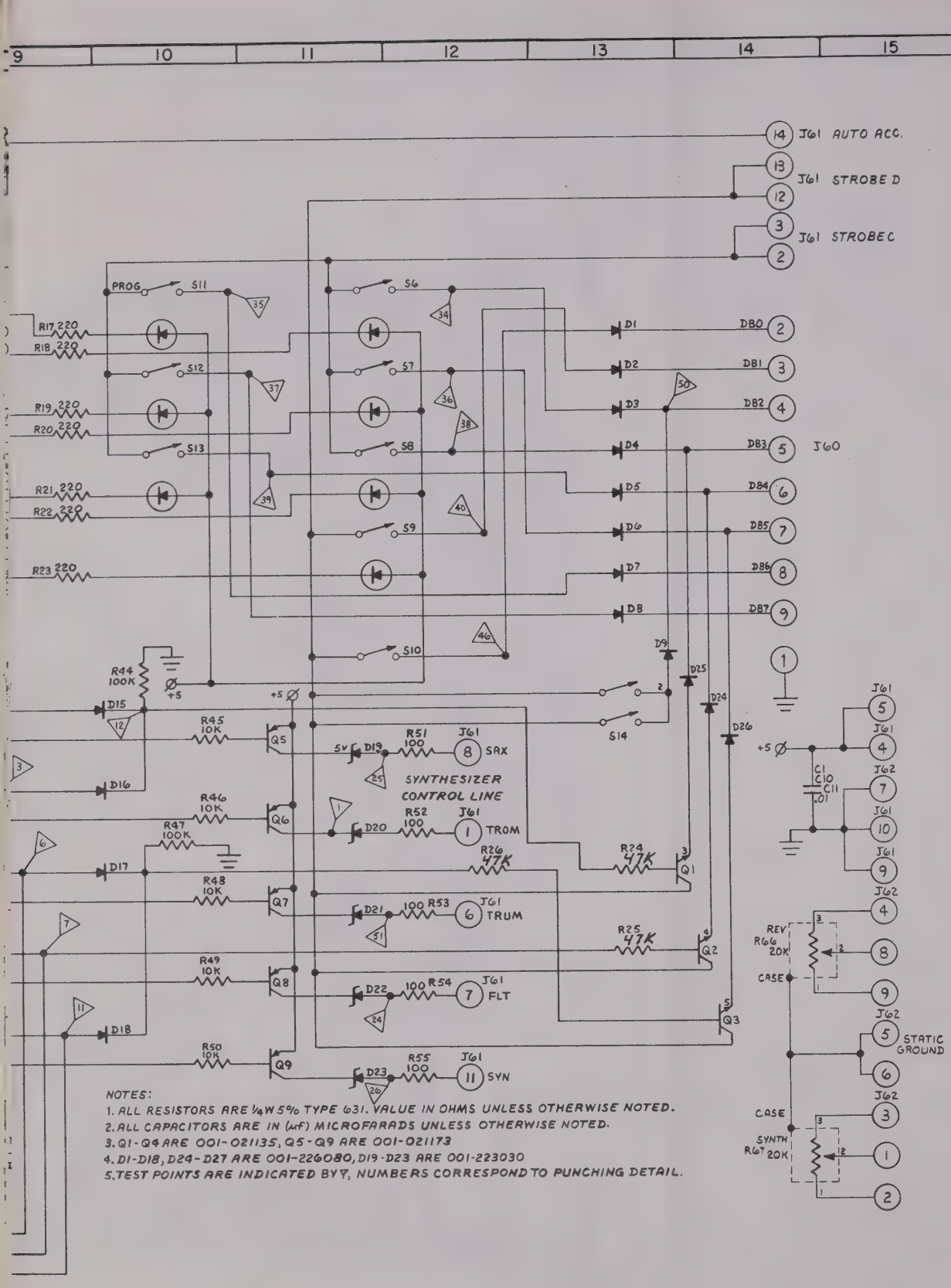
IC	NAME	PART #	+5	GND
1	TRANS ARRAY	075-003082		5
2	QUAD LATCH	075-004042	14	7
3	DUAL DFF	075-004013	14	7
4	DUAL DFF	075-004013	14	7
5	QUAD LATCH	075-004042	14	7

NOTES:
1. Q5-Q14 ARE 001-021314
2. D1-9, D11-D21 ARE 001-026080
3. D10 IS 001-026191
4. ALL RESISTORS ARE ¼W 5% CAT 631 VALUE IN Ω UNLESS OTHERWISE INDICATED.
5. ALL CAPS ARE IN MICROFARADS UNLESS OTHERWISE
6. TESTPOINTS ARE SHOWN BY ▽. NUMBERS CORRESPONDS TO NUMBER ON PUNCH DETAIL.

LOWER LEFT HAND ENDBLOCK PWB
SCHEMATIC
124-000813

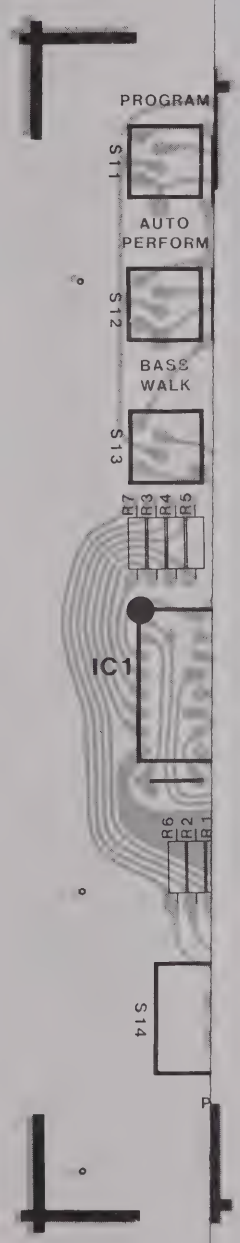


LOWER LEFT HAND ENDBLOCK PWB
LAYOUT
124-000813



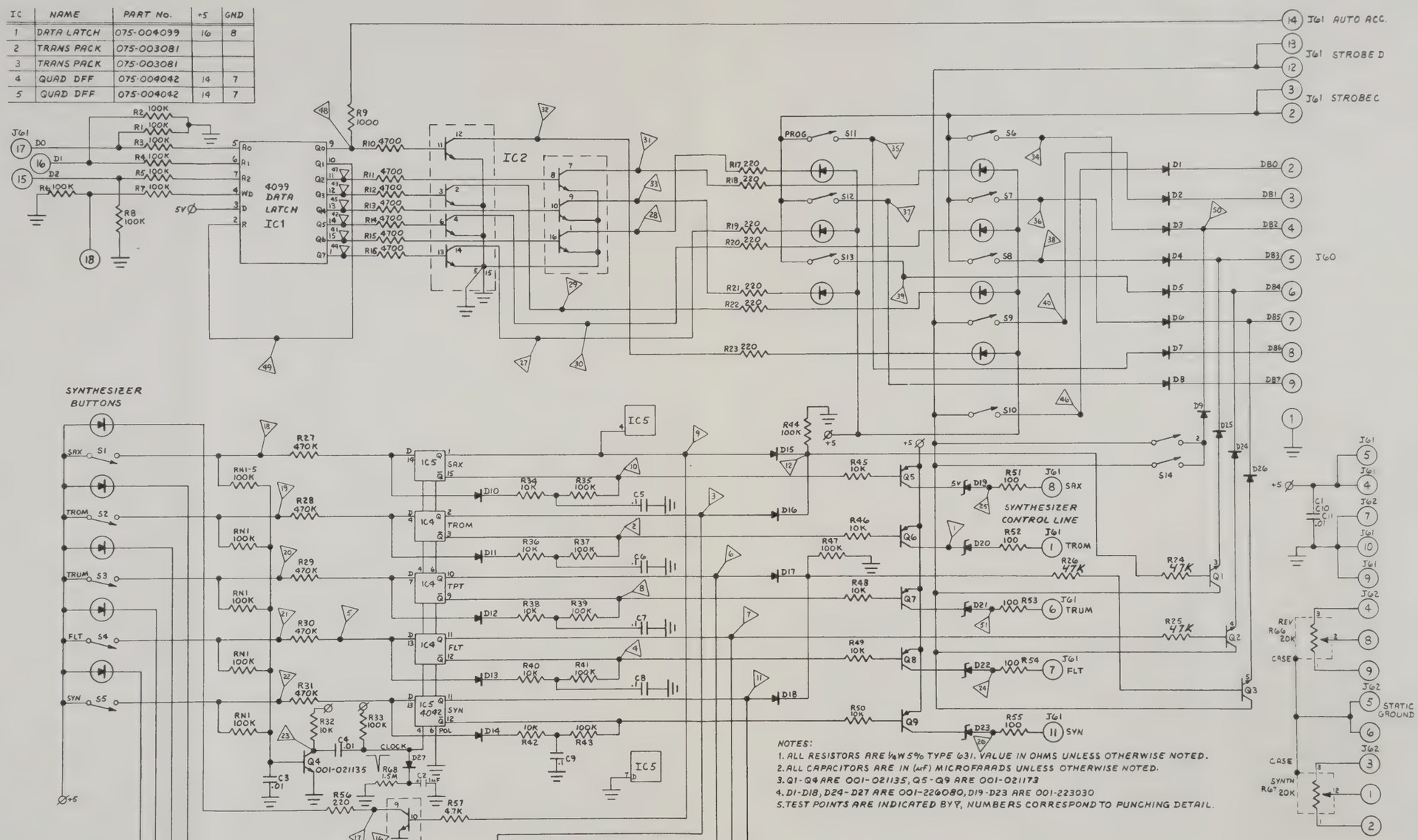
NOTES:

1. ALL RESISTORS ARE 1/4W 5% TYPE 631. VALUE IN OHMS UNLESS OTHERWISE NOTED.
2. ALL CAPACITORS ARE IN (uf) MICROFARADS UNLESS OTHERWISE NOTED.
3. Q1-Q4 ARE 001-021135, Q5-Q9 ARE 001-021173
4. D1-D18, D24-D27 ARE 001-226080, D19-D23 ARE 001-223030
5. TEST POINTS ARE INDICATED BY ▽, NUMBERS CORRESPOND TO PUNCHING DETAIL.



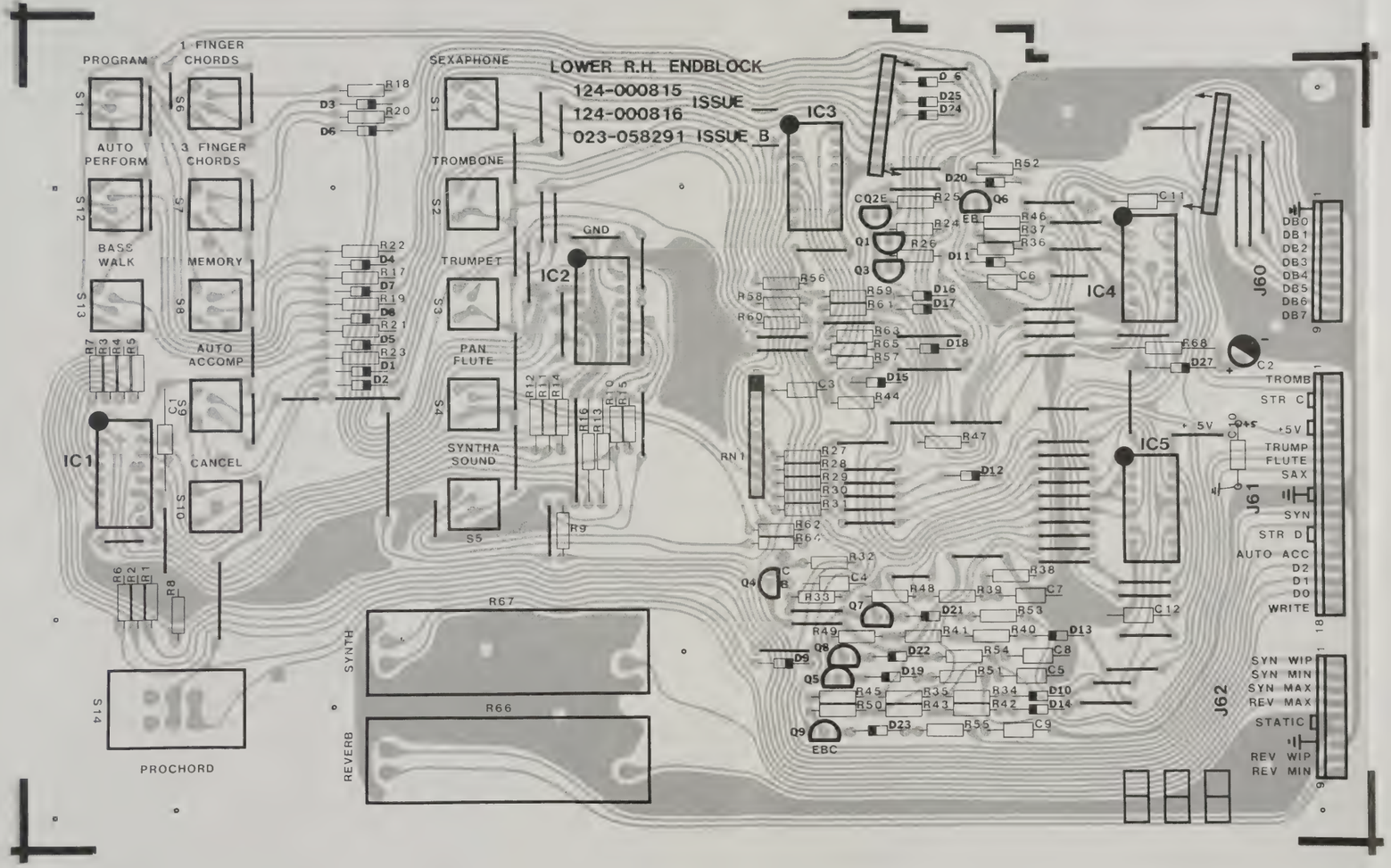
LOWER RIGHT HAND ENDBLOCK PWB
LAYOUT
124-000815

IC	NAME	PART No.	+5	GND
1	DATA LATCH	075-004099	16	8
2	TRANS PACK	075-003081		
3	TRANS PACK	075-003081		
4	QUAD DFF	075-004042	14	7
5	QUAD DFF	075-004042	14	7

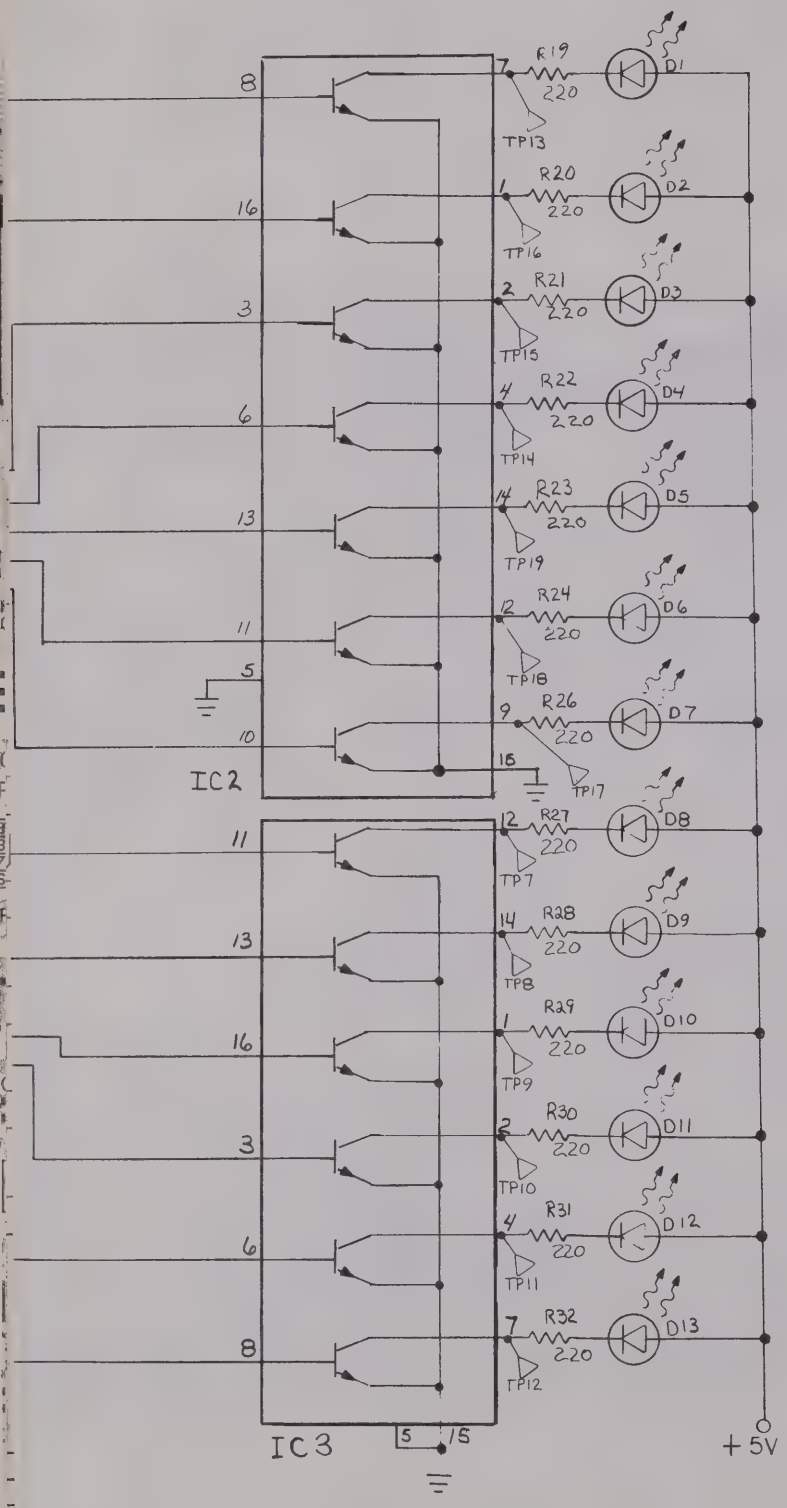


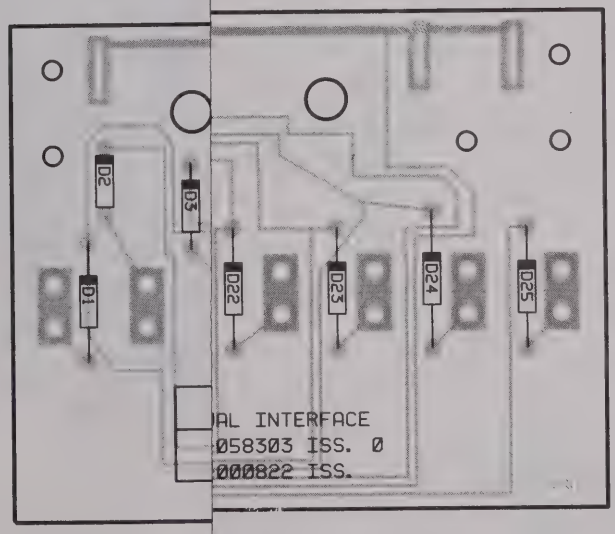
NOTES:
1. ALL RESISTORS ARE ¼W 5% TYPE 631. VALUE IN OHMS UNLESS OTHERWISE NOTED.
2. ALL CAPACITORS ARE IN (uf) MICROFARADS UNLESS OTHERWISE NOTED.
3. Q1-Q4 ARE 001-021135, Q5-Q9 ARE 001-021173
4. D1-D18, D24-D27 ARE 001-226080, D19-D23 ARE 001-223030
5. TEST POINTS ARE INDICATED BY ▽, NUMBERS CORRESPOND TO PUNCHING DETAIL.

LOWER RIGHT HAND ENDBLOCK PWB
SCHEMATIC
124-000815

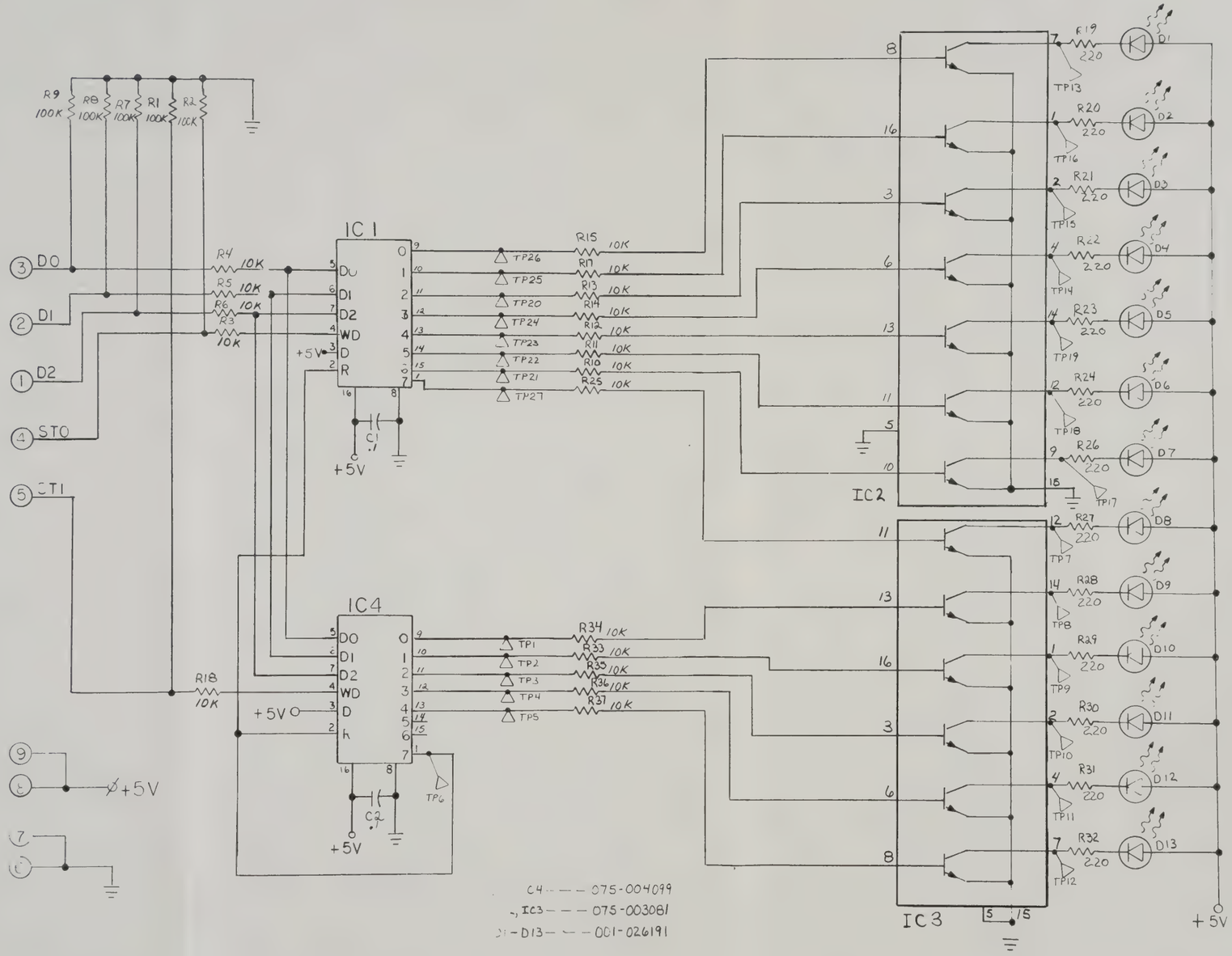


LOWER RIGHT HAND ENDBLOCK PWB
LAYOUT
124-000815


R19
220
D1
TP13
R20
220
D2
TP16
R21
220
D3
TP15
R22
220
D4
TP14
R23
220
D5
TP19
R24
220
D6
TP18
R26
220
D7
TP17
IC2
R27
220
D8
TP7
R28
220
D9
TP8
R29
220
D10
TP9
R30
220
D11
TP10
R31
220
D12
TP11
R32
220
D13
TP12
IC3
+5V

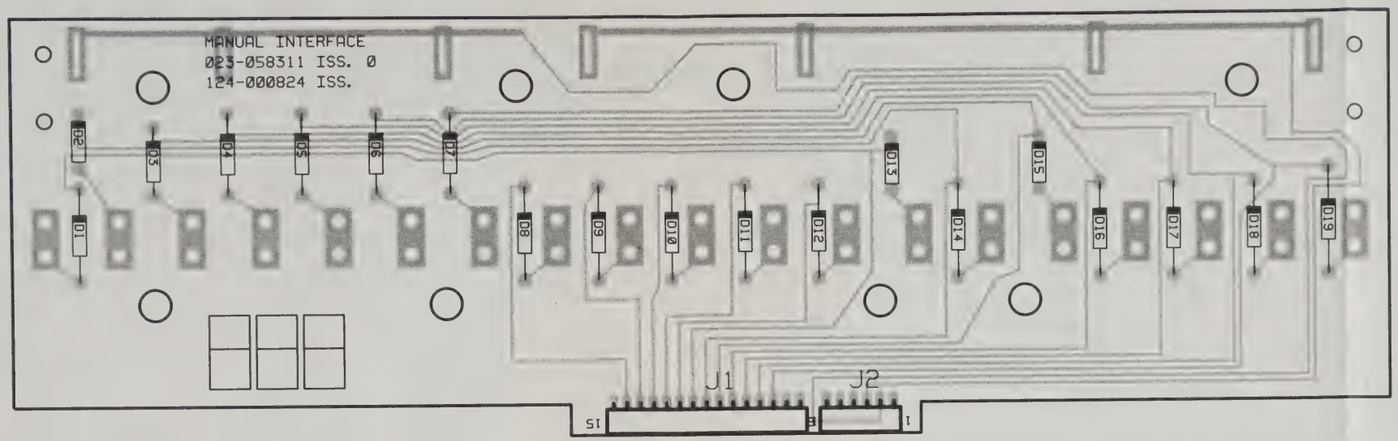


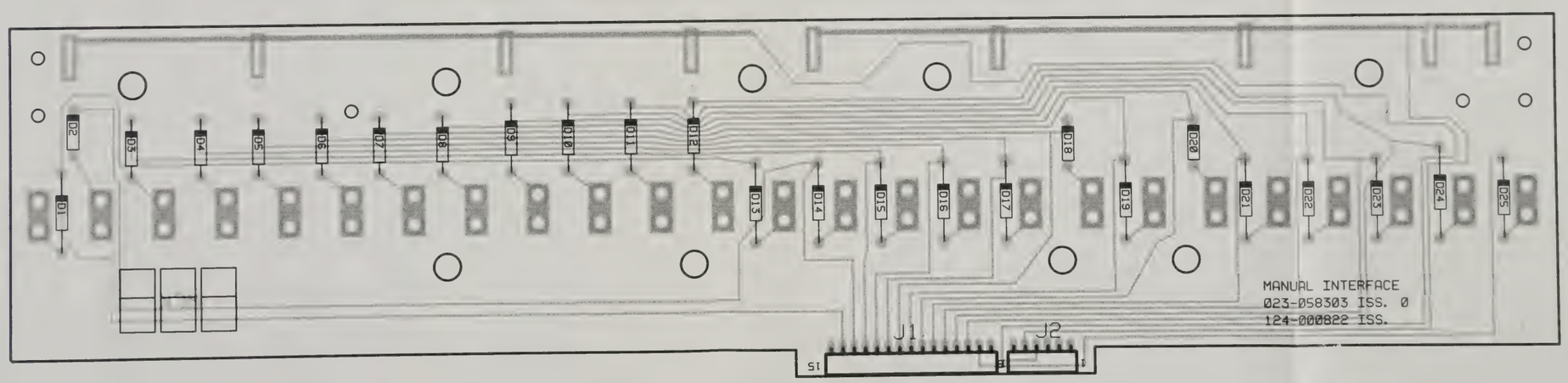
KEY CONTACT PWB
LAYOUT
124-000822,824



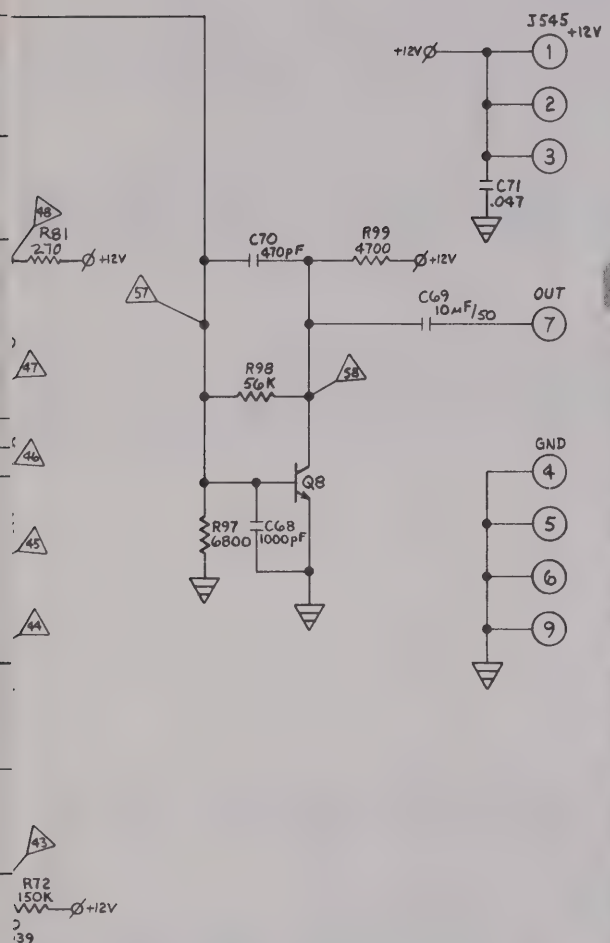
C4 - - - 075-004099
IC3 - - - 075-003081
D1-D13 - - - 001-026191

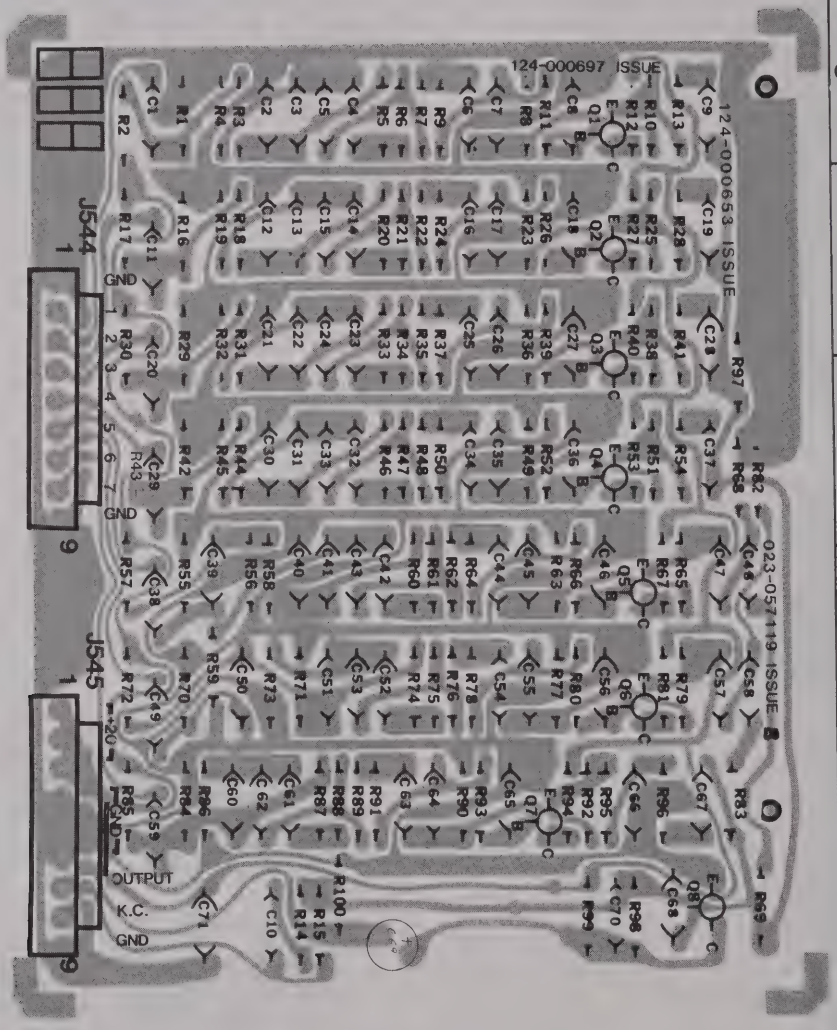
KEY L.E.D. PWB
SCHEMATIC
124-000817

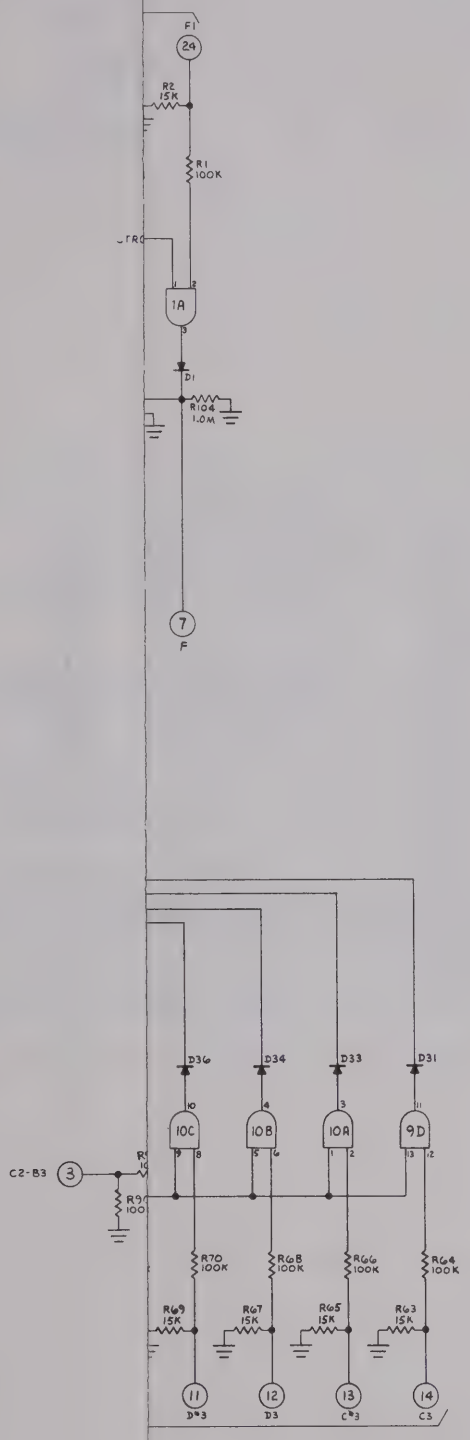




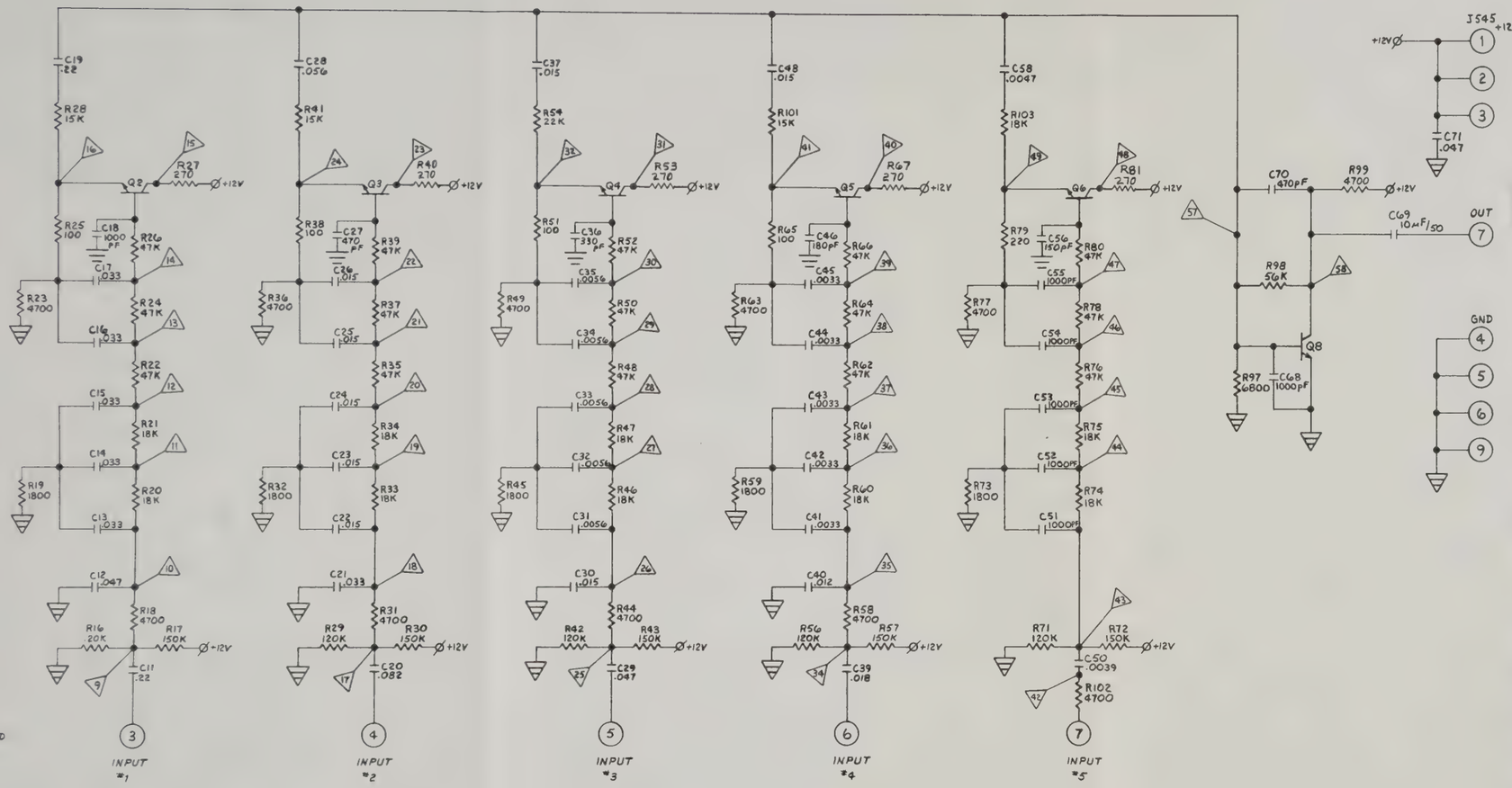
KEY CONTACT PWB
LAYOUT
124-000822,824

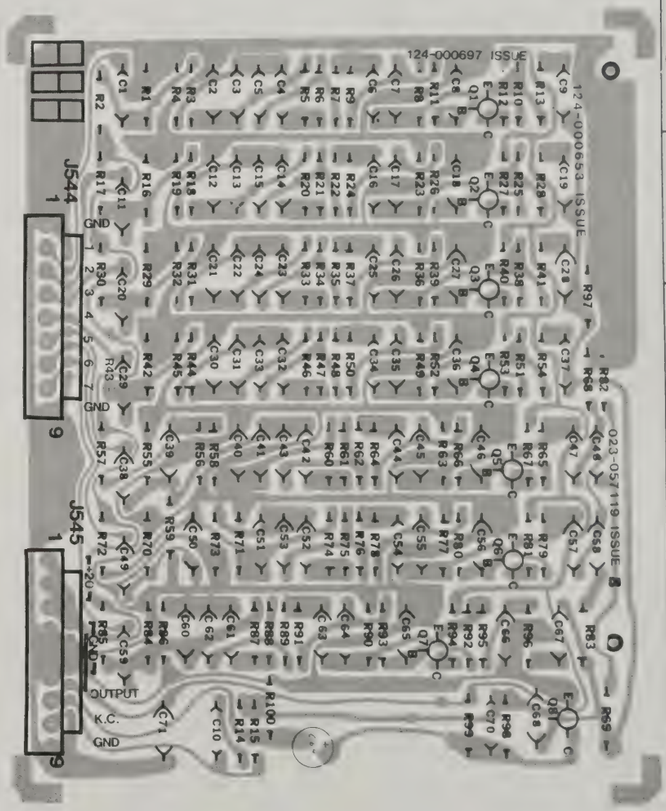

J545
+12V
+12VØ
1
2
3
C71
.047
R81
270
ØI2V
C70
470pF
R99
4700
ØI2V
C69
10MF/50
OUT
7
57
47
R98
56K
58
46
Q8
45
R97
6800
C68
1000pF
44
GND
4
5
6
9
43
R72
150K
ØI2V


124-000697 ISSUE
124-000653 ISSUE
023-057119 ISSUE B
J544
J545
GND
OUTPUT
K.C.
GND

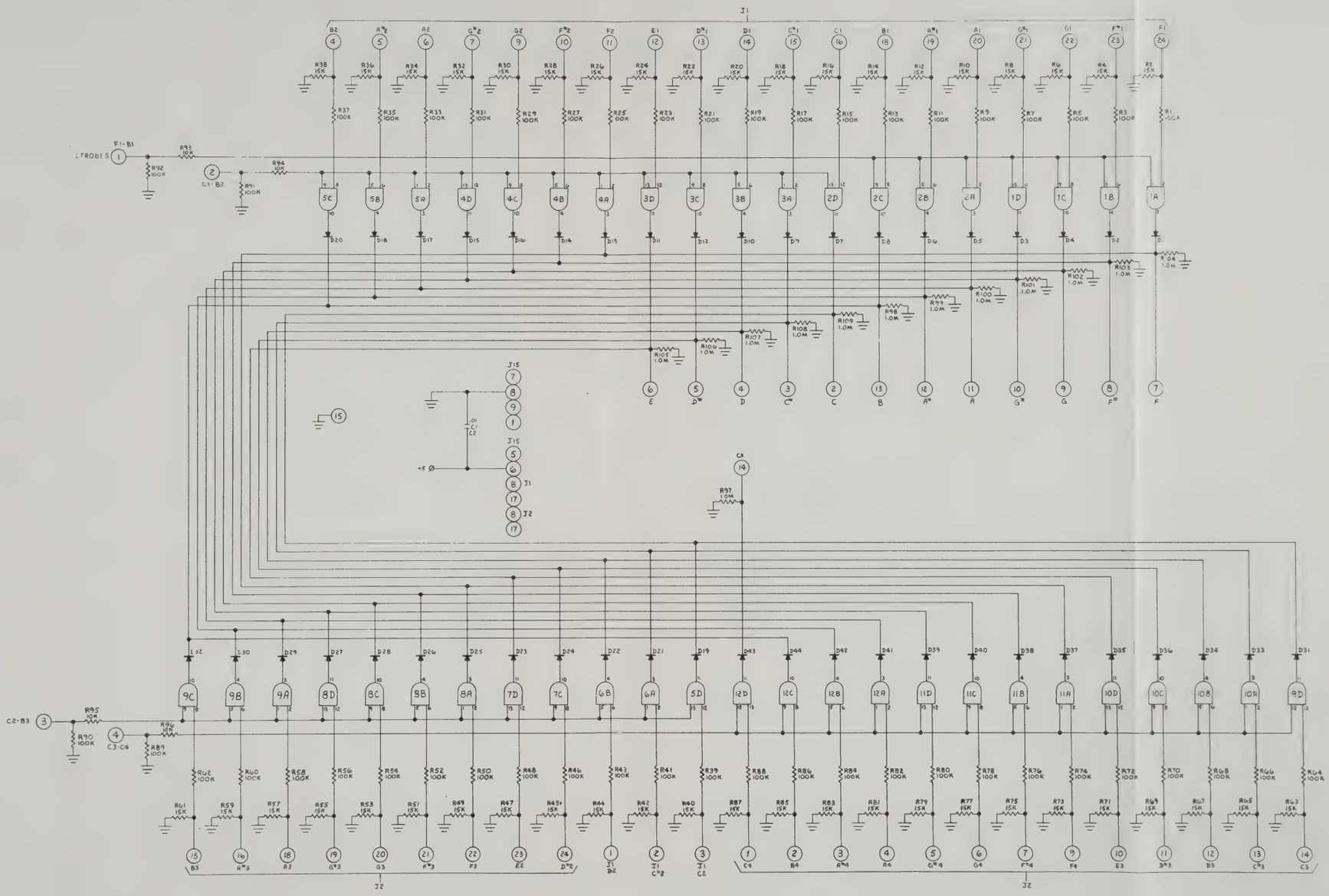


KEYBOARD INTERFACE PWB
SCHEMATIC
124-000828



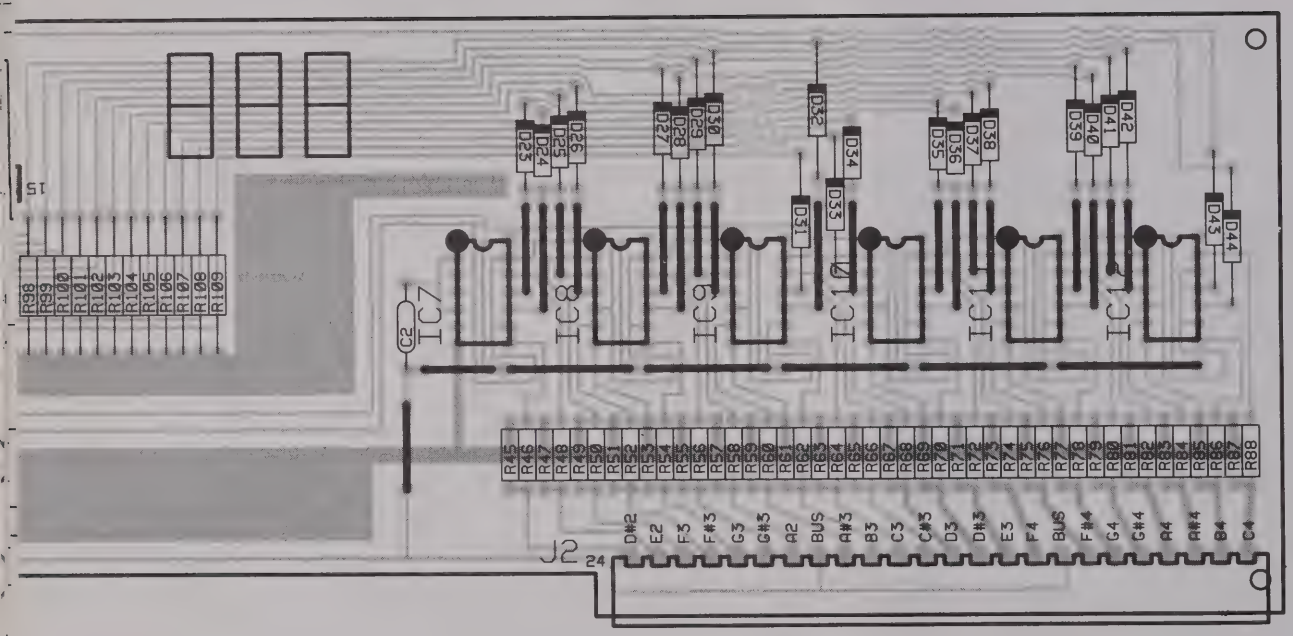


SINE FILTER PWB
SCHEMATIC & LAYOUT
124-000827



NOTES:
1. ALL RESISTORS ARE ¼W 5% VALUE IN OHMS.
2. CAPACITOR VALUES ARE IN MICROFARADS EXPECT WHERE SHOWN.
3. ALL DIODES ARE 001-226080
4. ALL GATES ARE 075-004081

KEYBOARD INTERFACE PWB
SCHEMATIC
124-000828


R98 R99 R100 R101 R102 R103 R104 R105 R106 R107 R108 R109
C2
IC7 IC8 IC6 IC5 IC4 IC3 IC2
D23 D24 D25 D26 D27 D28 D29 D30 D31 D32 D33 D34 D35 D36 D37 D38 D39 D40 D41 D42 D43 D44
R45 R46 R47 R48 R49 R50 R51 R52 R53 R54 R55 R56 R57 R58 R59 R60 R61 R62 R63 R64 R65 R66 R67 R68 R69 R70 R71 R72 R73 R74 R75 R76 R77 R78 R79 R80 R81 R82 R83 R84 R85 R86 R87 R88
J2
24
D#2 E2 F3 F#3 G3 G#3 A2 BUS A#3 B3 C3 C#3 D3 D#3 E3 F4 BUS F#4 G4 G#4 A4 A#4 B4 C4

SECTION VI
PARTS LIST

PARTS ORDERING INFORMATION

When ordering replacement parts from the Hammond Organ Company, the following guidelines should be observed:

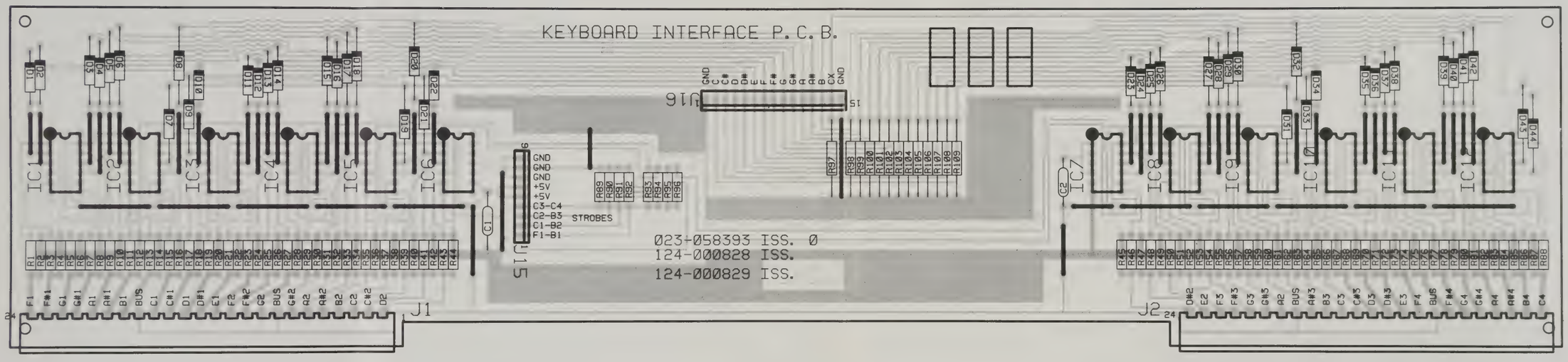
1) Address all parts orders to:

HAMMOND ORGAN COMPANY
PARTS DEPARTMENT
4200 W. DIVERSEY
CHICAGO, IL. 60639

2) All orders should specify the model and serial numbers of the instrument that is being serviced. (Note: On late model instruments the model and serial numbers are printed on the tag attached to the underside of the organ keyboard.)

3) All orders should specify the Hammond part numbers of the desired parts.

4) All orders should provide a specific description of the desired parts. (For example: Power transformer, 15 volt zener diode, F through B key module, etc.)



KEYBOARD INTERFACE PWB
LAYOUT
124-000828

SECTION VI
PARTS LIST

PARTS ORDERING INFORMATION

When ordering replacement parts from the Hammond Organ Company, the following guidelines should be observed:

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HAMMOND ORGAN COMPANY
PARTS DEPARTMENT
4200 W. DIVERSEY
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3) All orders should specify the Hammond part numbers of the desired parts.

4) All orders should provide a specific description of the desired parts. (For example: Power transformer, 15 volt zener diode, F through B key module, etc.)

PARTS LIST EXPLANATION

This parts list begins by listing all the major assemblies (designated by a ◯) and their part numbers on pages 6-5 thru 6-7. Major assembly breakdowns are then listed numerically (①, ②, ③, etc. . .) on the on the following pages. The format for which major assemblies are broken down is shown below.

⑥ Major Assembly

1 Minor Assembly
2 " "
3 " "
.
.
.

a Component of Minor Assembly
b " " " "
c " " " "

i Sub-Component
ii "
iii "

Example:

⑥	Lower Keyboard Assembly	119-000095
1	Preset Key Module	057-054157
2	Preset Key Module	057-054156
3	Key Module	057-054077-005
.		
.		
.		
37	Visual Memory Cancel Assembly	060-053454-001
a	Spring	012-028799
b	Grommet	043-053308
.		
.		
.		
m	Screw	999-054489
i	Washer	999-000810

PWB Assemblies are symbolized by ⬭ and are listed in numerical order following the Major Assembly breakdowns.

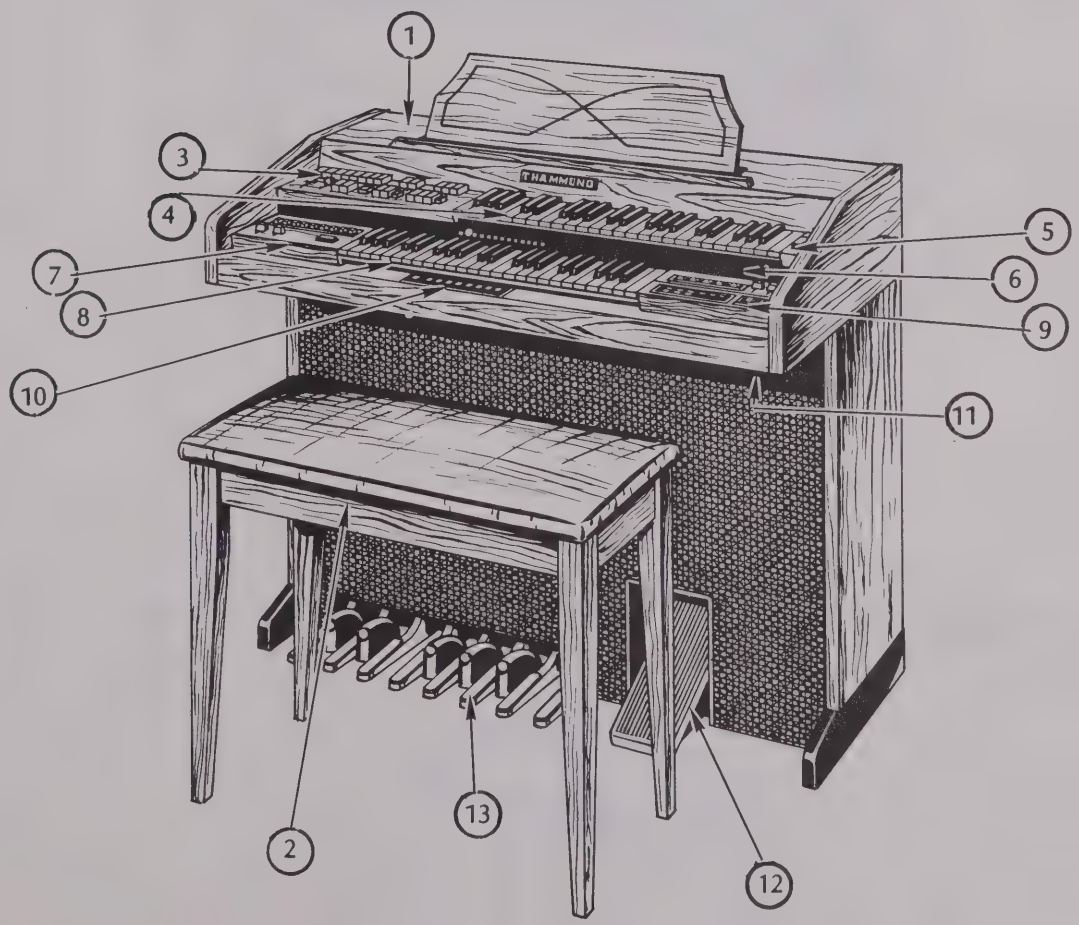
TABLE OF CONTENTS
MODEL 134100 & 136100 SERIES

		PAGE
	MAJOR ASSEMBLIES (FRONT VIEW)	6-5
	MAJOR ASSEMBLIES (REAR VIEW)	6-6
(1.)	CABINET ASSEMBLY	6-7
(2.)	BENCH ASSEMBLY	6-7
(3.)	UPPER LEFT HAND ENDBLOCK ASSEMBLY	6-8
(4.)	UPPER KEYBOARD ASSEMBLY	6-9
(5.)	UPPER RIGHT HAND ENDBLOCK ASSEMBLY	6-10
(6.)	FRONT STRIP ASSEMBLY	6-10
(7.)	LOWER LEFT HAND ENDBLOCK ASSEMBLY	6-11
(8.)	LOWER KEYBOARD ASSEMBLY	6-12
(9.)	LOWER RIGHT HAND ENDBLOCK ASSEMBLY	6-12
(10.)	CHORD SWITCH ASSEMBLY	6-13
(11.)	HEADPHONE JACK	6-14
(12.)	EXPRESSION PEDAL ASSEMBLY	6-14
(13.)	PEDAL SWITCH ASSEMBLY	6-15
(14.)	REAR COVER	6-16
(15.)	REVERB UNIT WITH P.W.B.	6-16
(16.)	EXPRESSION PEDAL HOUSING	6-16
(17.)	LINE CORD ASSEMBLY	6-16
(18.)	SPEAKER	6-16
(19.)	POWER AMPLIFIER ASSEMBLY	6-16
(20.)	POWER TRANSFORMER ASSEMBLY	6-17
	MISCELLANEOUS PARTS	6-17

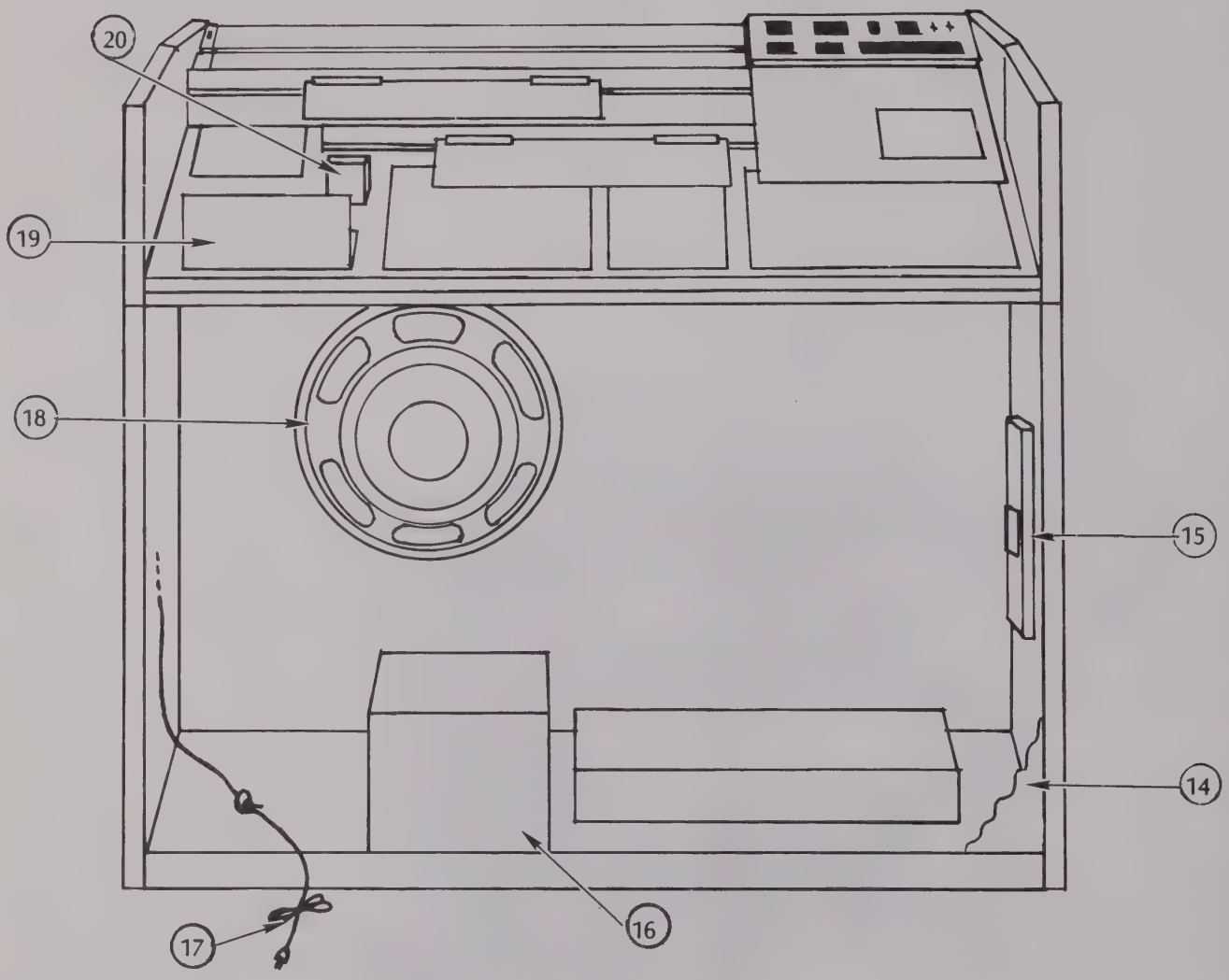
P.W.B ASSEMBLIES

P.W.B ASSEMBLIES ARE LISTED IN SEQUENTIAL ORDER BEGINNING ON PAGE 6-20

1.	CABINET ASSEMBLY	
	MODEL 136124	111-136124
	MODEL 134124	111-134124
2.	BENCH ASSEMBLY	152-134124
3.	UPPER LEFT HAND ENDBLOCK	
	MODEL 136124	067-058355
	MODEL 134124	067-058354
4.	UPPER KEYBOARD ASSEMBLY	119-000099
	(EARLY UNITS)	119-000098
5.	UPPER RIGHT HAND ENDBLOCK	067-058356
6.	FRONT STRIP ASSEMBLY	
	MODEL 136124	120-000170
	MODEL 134124	061-058229
7.	LOWER LEFT HAND ENDBLOCK	067-058352
8.	LOWER KEYBOARD ASSEMBLY	119-000099
	(EARLY UNITS)	119-000098
9.	LOWER RIGHT HAND ENDBLOCK	
	MODEL 136124	067-058353
	MODEL 134124	025-058250
10.	CHORD SWITCH ASSEMBLY	008-057173
11.	HEADPHONE JACK	005-049363
12.	EXPRESSION PEDAL ASSEMBLY	123-000088
13.	PEDAL SWITCH ASSEMBLY	116-000038



(14)	REAR COVER	056-058239
(15)	REVERB UNIT WITH P.W.B.	121-000215
(16)	EXPRESSION PEDAL HOUSING	046-046386
(17)	LINE CORD ASSEMBLY	
	DOMESTIC	011-058442
	(EARLY UNITS)	011-057663
	EXPORT	011-054803
(18)	SPEAKER 12" 8 OHM	014-057234
(19)	POWER AMPLIFIER ASSEMBLY	
	DOMESTIC	126-000133
	EXPORT	126-000134
(20)	POWER TRANSFORMER ASSEMBLY	
	DOMESTIC	003-058132
	EXPORT	003-058134



(1.) CABINET ASSEMBLY (FIG. 1a)

MODEL 136124	111-136124
MODEL 134124	111-134124
1. TOP AND MUSIC PANEL ASSEMBLY	051-004652
a. TOP PANEL ONLY	051-004653
i. CATCH LATCH (RIGHT HAND)	032-039960
(LEFT HAND)	032-039961
ii. SCREWS (CATCH LATCH)	885-050534
b. MUSIC PANEL ASSEMBLY	051-004656
i. HINGE (2 USED)	032-033414
ii. SCREW (HINGE)	882-030737
iii. BUMPER (2 USED)	043-049938
c. RAIL BRACKET (SECURES TOP PANEL) (2 USED)	035-058347
i. SCREWS (2 PER BRACKET)	879-050938
d. TOP PANEL HOLD DOWN SCREWS (4 USED)	885-051138
2. CHEEK (LEFT HAND)	051-004666
(RIGHT HAND)	051-004667
3. END PANEL (LEFT HAND)	051-004668
(RIGHT HAND)	051-004669
4. BASE FOOT (LEFT HAND)	051-004670
(RIGHT HAND)	051-004671
5. FRONT STATIONARY RAIL (136000)	051-004663
(134000)	051-004661
6. PANEL & GRILLE CLOTH ASSEMBLY	052-057365-002
7. GLIDES (4 USED)	032-030871
8. TRIM STRIP (2 USED)	055-031802
9. LOGO	037-052752

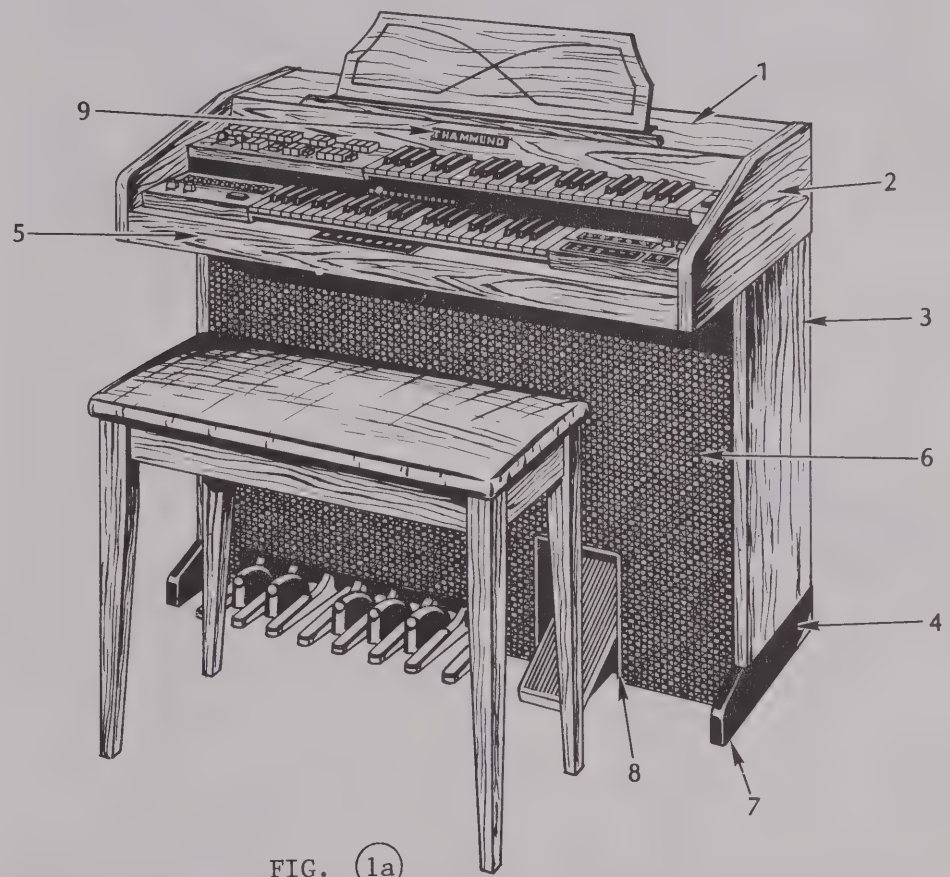


FIG. (1a)

(2.) BENCH ASSEMBLY (FIG. 2a) 152-134124

1. CUSHION TOP	051-004680
2. LEGS	051-004681
a. LOCKWASHER	999-000745
b. NUT	999-007171
c. GLIDES	032-030871
3. SIDE RAIL	051-004683
4. FRONT AND BACK RAIL	051-004682
5. CORNER BRACE (4 USED)	035-051502
6. SCREWS (16 USED)	879-040937

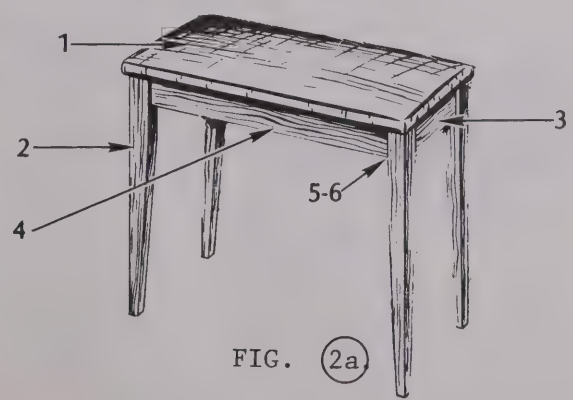


FIG. (2a)

(3.) UPPER LEFT HAND ENDBLOCK ASSEMBLY (FIG. 3a)

MODEL 136124.....067-058355
MODEL 134124 067-058354
1. ENDBLOCK ONLY (SCREENED) (136124) 061-058325
(134124).....061-058324
2. ENDBLOCK PWB WITH TABS (136124) 067-058355-001
(134124) 067-058354-001

a. ROCKER TAB

UPPER SUSTAIN 031-057193-001
CLARINET 16'.....031-057193-002
TRUMPET 8' 031-057193-004
STRING 8' (2 USED) 031-057193-006
FLUTE 16'.....031-057193-036
FLUTE 5-1/3' (136000 ONLY) 031-057193-037
FLUTE 8' (2 USED) 031-057193-015
FLUTE 4' (2 USED).....031-057193-016
FLUTE 2' 031-057193-017
VIBRAHARP (136000 ONLY) 031-057193-009
HARPSICHORD.....031-057193-013
PIANO 031-057193-014
VIBRATO ON 031-057193-020
VIBRATO SMALL.....031-057193-021
VIBRATO DELAYED 031-047193-022
PEDAL SUSTAIN 031-057193-023
8' PEDAL 16'/8'.....031-057193-043
FASCINATING FINGERS 031-057193-035
HORN 8' 031-057193-019
ENSEMBLE (136000 ONLY).....031-057193-045
TREMOLO FLUTES (136000 ONLY) 031-057193-046
FAST/TREMOLO/SLOW (136000 ONLY) 031-057193-047
ONE FINGER CHORDS (134000 ONLY) 031-057193-048
MEMORY (134000 ONLY) 031-057193-049
BASS WALK (134000 ONLY) 031-057193-044
PRO CHORD (134000 ONLY) 031-057193-033

b. P.W.B (136000).....124-000811
(134000) 124-000812

i. SWITCH ASSEMBLY (9 SECTION)....008-055896
(3 SECTION) 008-057242
(7 SECTION) 008-057250
(6 SECTION)....008-058360
(8 SECTION) 008-058358
(5 SECTION) 008-058359
INDIVIDUAL SWITCH.....008-054834
ii. SLIDE POTENTIOMETER PEDAL (20K) 676-056194
iii. DUAL SLIDE POT BALANCE (20K) 676-057480

3. KNOB (2 USED).....025-053145-001
4. SCREW (9 USED) 885-030538
5. FELT PAD (SLIDE POT) (2 USED) 042-053136

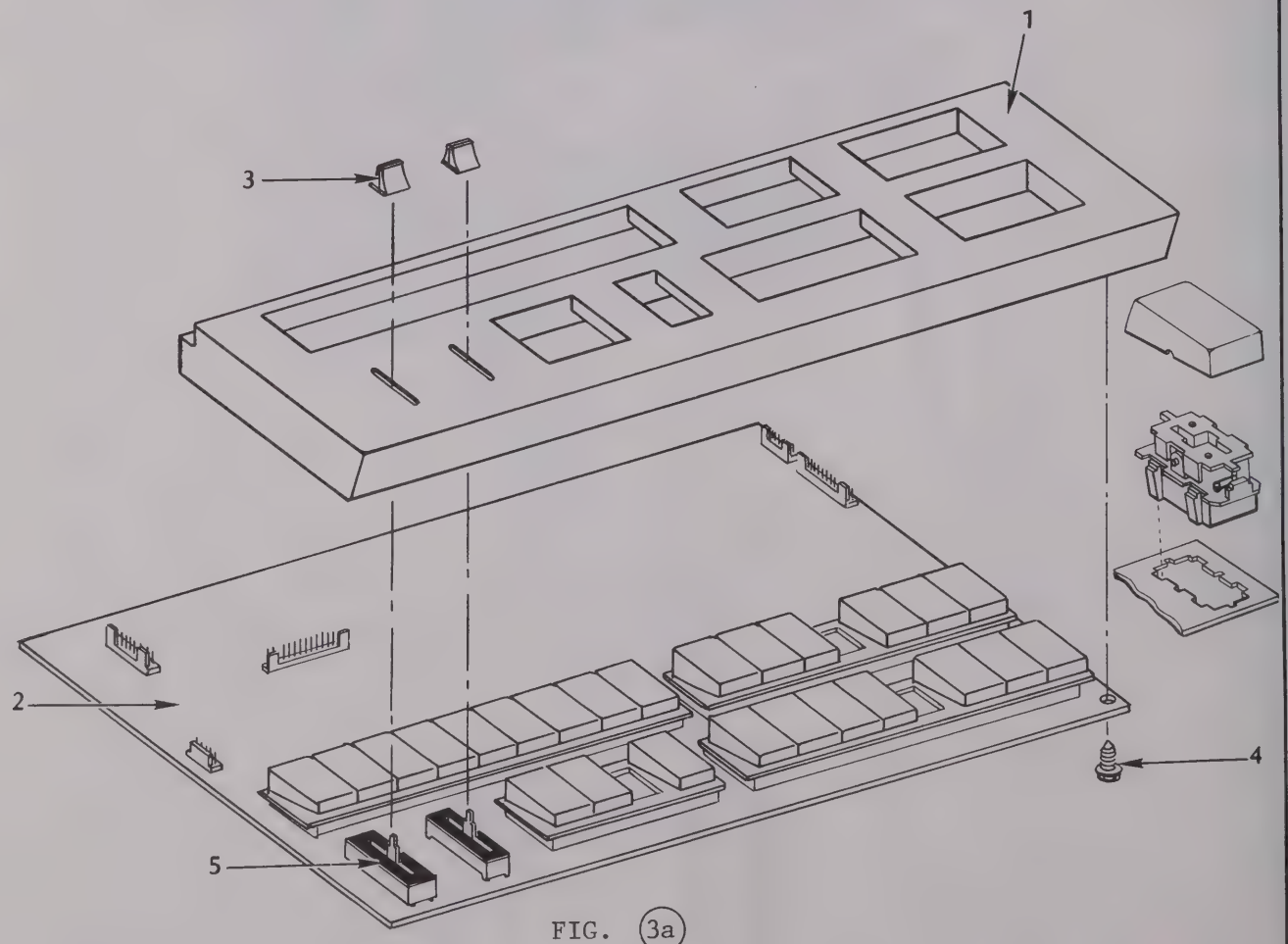
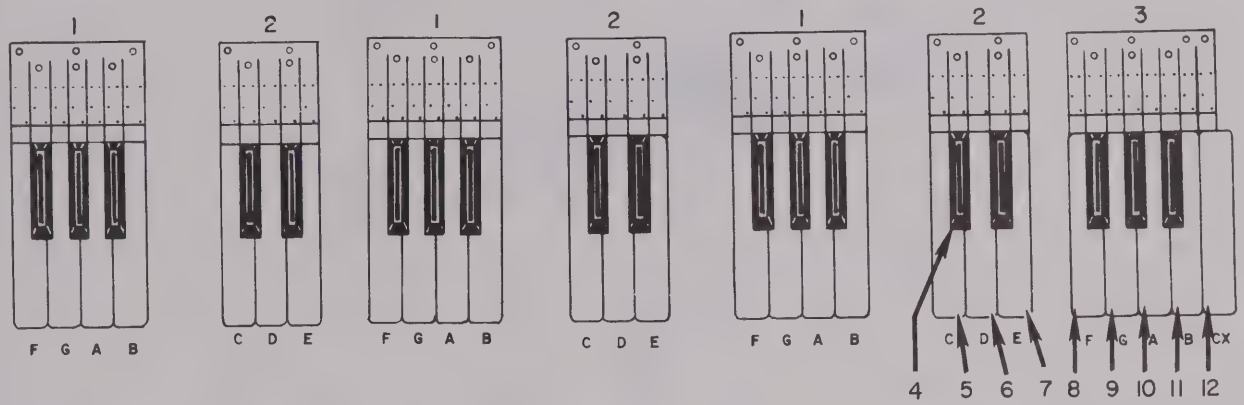
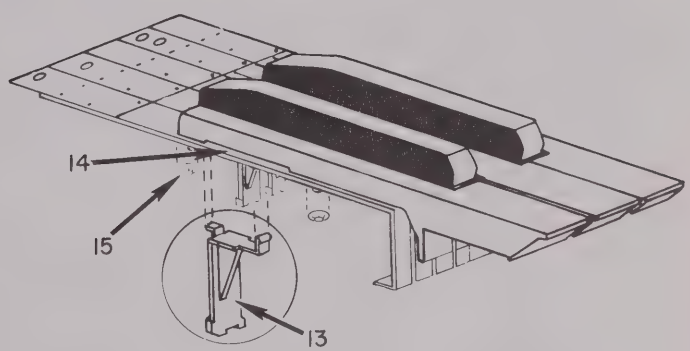


FIG. (3a)

(4.) UPPER KEYBOARD ASSEMBLY (FIG 4a).....119-000099
(EARLY UNITS) 119-000098

1.	KEY MODULE	(F TO B) (3 USED)	057-054076-005
2.	KEY MODULE	(C TO E) (3 USED).....	057-054077-005
3.	KEY MODULE	(F TO CX) (1 USED)	057-054075-005
4.	SHARP KEY	(BLACK)	025-053538
5.	C KEY	(IVORY).....	025-053543-001
6.	D KEY	(IVORY)	025-053544-001
7.	E KEY	(IVORY)	025-053545-001
8.	F KEY	(IVORY).....	025-053546-001
9.	G KEY	(IVORY)	025-053547-001
10.	A KEY	(IVORY)	025-053548-001
11.	B KEY	(IVORY).....	025-053549-001
12.	CX KEY	(IVORY)	025-053550-001
13.	ACTUATOR	(1 PER KEY)	025-047278
14.	DOUBLE SIDED TAPE		.033-053285
15.	PALNUT FASTENER	(2 PER KEY)	013-053247
16.	KEY CONTACT P.W.B.	(25 NOTE)	124-000822
		(EARLY UNITS).....	023-045694-003
17.	KEY CONTACT P.W.B.	(19 NOTE)	124-000824
		(EARLY UNITS)	023-045695-003
18.	KEYBOARD EXTRUSION		.026-058417
		(EARLY UNITS)	026-056656
19.	UPSTOP FELT		042-045676
20.	DOWNSTOP FELT		.042-045676
21.	SPEED NUT		999-040048
22.	CLAMP STRIP	(NOT SHOWN) (6 HOLE)	041-045358
		(5 HOLE).....	041-045357
		(3 HOLE)	041-045356
23.	CLAMP SCREWS		926-050538





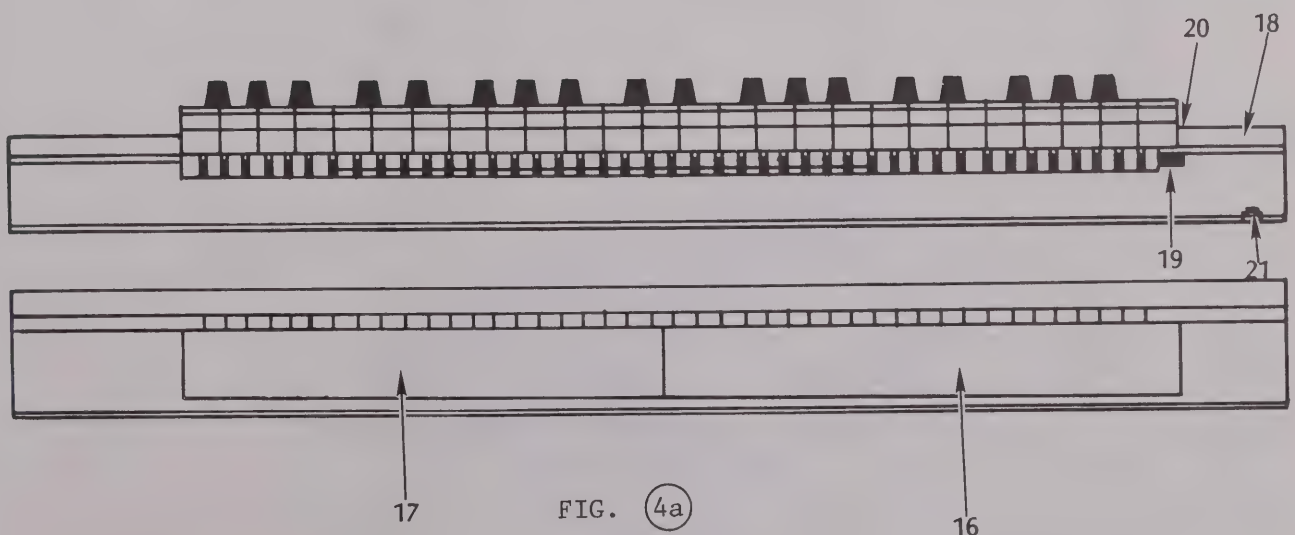


FIG. (4a)

(5.) UPPER RIGHT HAND ENDBLOCK (FIG 5a).....067-058356
1. ENDBLOCK ONLY 025-058251
2. POWER SWITCH 008-057601
MOUNTING SCREWS.....885-051338

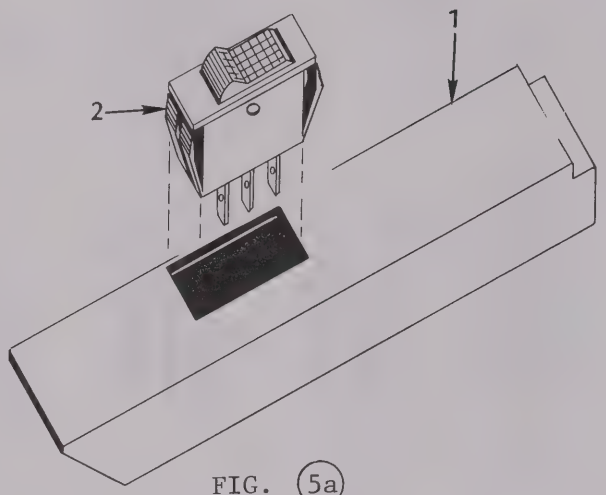


FIG. (5a)

(6.) FRONT STRIP ASSEMBLY (FIG 6a)
MODEL 136124.....120-000170
MODEL 134124 (SCREENED) 061-058229
(NOTE: MINOR ASSEMBLIES LISTED BELOW ARE PART OF ASSEMBLY 120-000170 ONLY)
1. FRONT STRIP (SCREENED).....061-058231
2. KEY L.E.D. P.W.B. 124-000817
a. L.E.D. (RED) (13 USED) 001-026191
3. P.W.B. MOUNTING BRACKET.....035-058232
4. MOUNTING SCREWS (5 USED) 885-030538

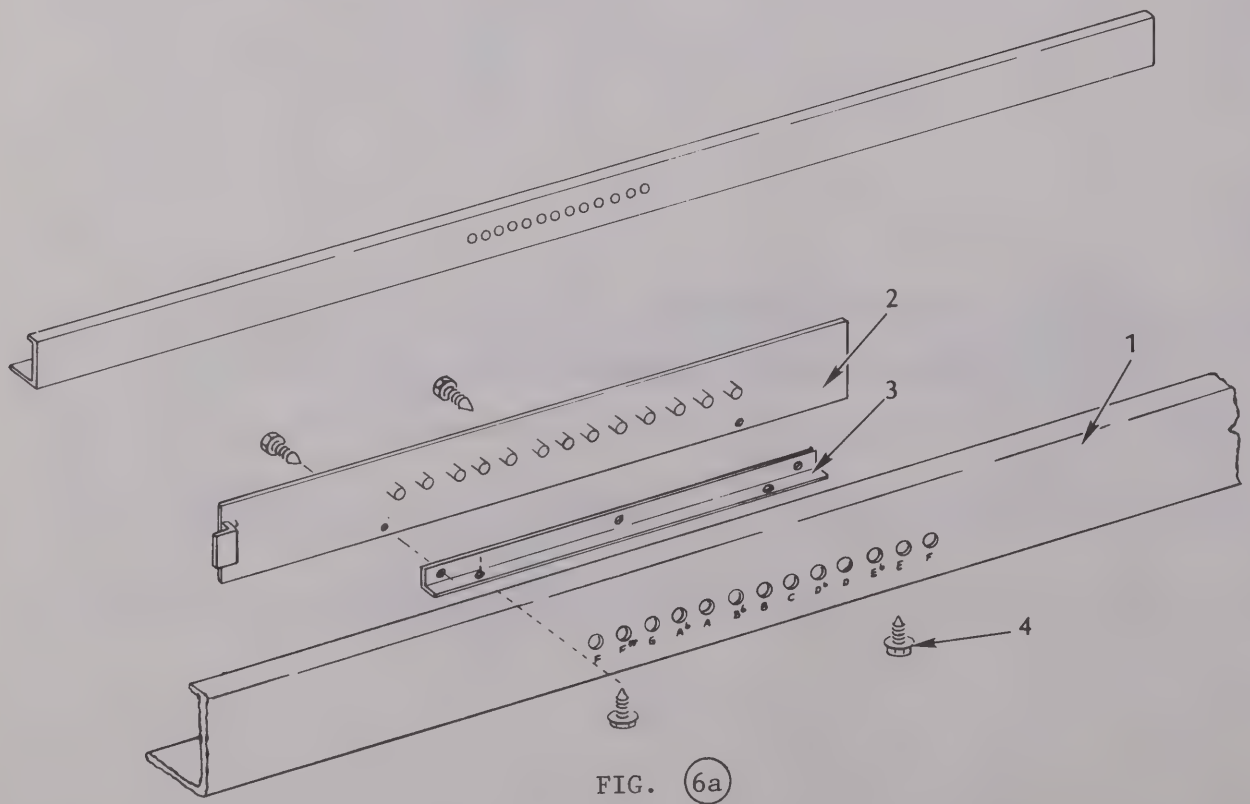


FIG. (6a)

(7.) LOWER LEFT HAND ENDBLOCK (FIG 7a).....067-058352

1.	ENDBLOCK ONLY (SCREENED)	061-058323
2.	BEZEL	025-058349
3.	ENDBLOCK P.W.B. WITH TAB.....067-058352-001	
	a. TAB (SCREENED) RHYTHM BREAK	031-054792-002
	b. P.W.B.	I24-000813
	i. SLIDE POTENTIOMETER VOLUME (20K)	676-056194
	ii. SLIDE POTENTIOMETER TEMPO (1M)	676-056192
4.	FELT PAD (SLIDE POT)(2 USED)	042-053136
5.	KNOBS (SLIDE POT) (2 USED)	025-053145-001
6.	BEZEL MOUNTING SCREWS (6 USED).....909-030538	
7.	WASHER (6 USED)	999-000071
8.	SCREW (5 USED)	885-030538

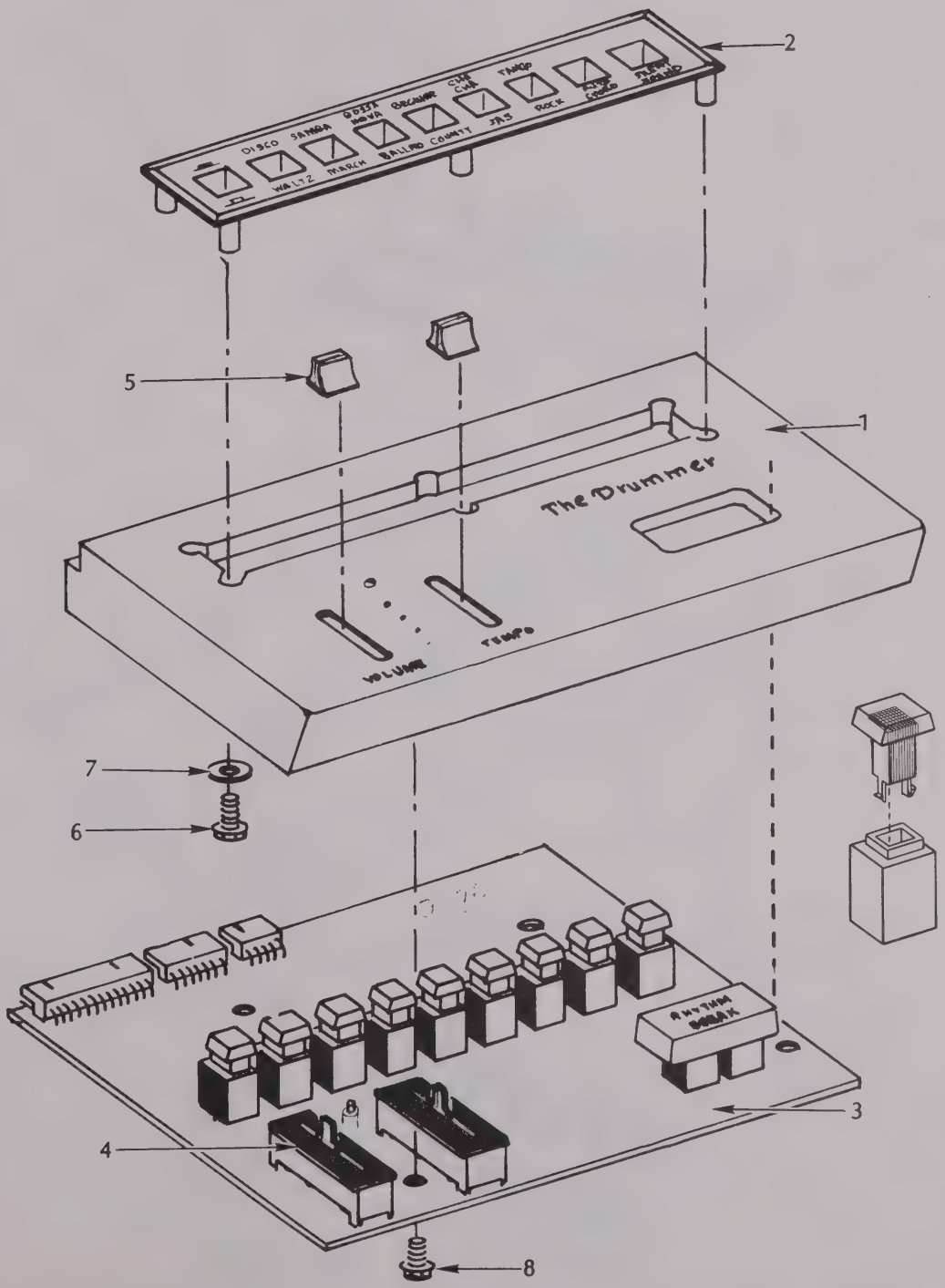


FIG. (7a)

(8.) LOWER KEYBOARD ASSEMBLY.....119-000099
(EARLY UNITS) 119-000098
(REFER TO THE UKB ASSEMBLY # 4 FOR DETAILED PARTS INFORMATION)

(9.) LOWER RIGHT HAND ENDBLOCK (FIG 9a)
MODEL 136124.....067-058353
MODEL 134124 025-058250
(NOTE: MINOR ASSEMBLIES LISTED BELOW ARE PART OF ASSEMBLY 067-058353 ONLY)

1. ENDBLOCK ONLY (SCREENED).....061-058326
2. BEZEL (SOLOIST) 025-058350
(COMPOSE-A-CHORD) 025-057205
3. ENDBLOCK P.W.B. WITH TAB.....067-058353-001
a. TAB (SCREENED) PRO CHORD 031-057193-003
b. P.W.B. 124-000815
i. ROCKER SWITCH.....008-054834
ii. SLIDE POTENTIOMETER REV & VOL (20K)676-056194
4. FELT PAD (SLIDE POT) (2 USED)) 042-053136
5. SCREW (BEZEL MOUNT) (10 USED).....909-030538
6. WASHER (10 USED) 999-000071
7. SCREW (P.W.B. MOUNT) (7 USED) 885-030538
8. KNOBS (SLIDE POT) (2 USED).....025-053145-001

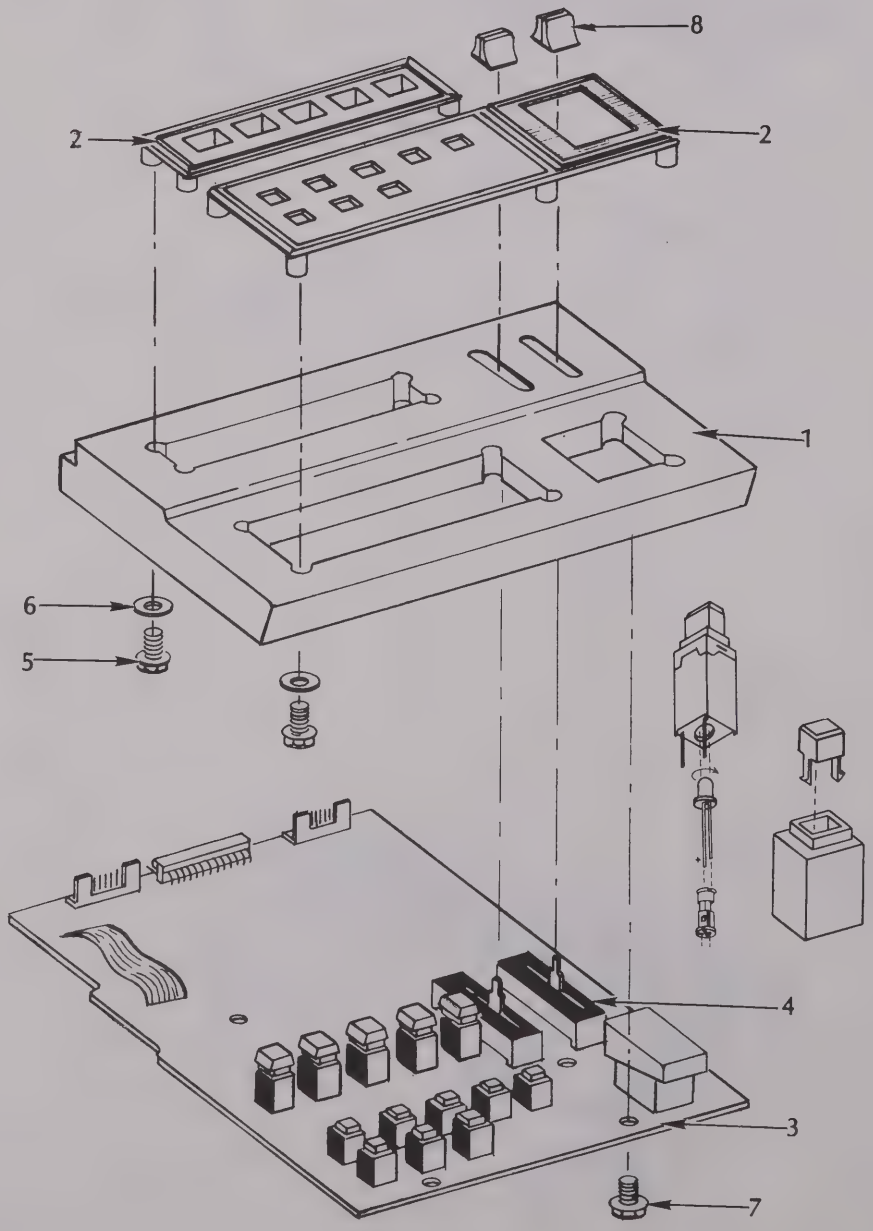


FIG. (9a)

(10) CHORD SWITCH ASSY (FIG 10a) (136124 ONLY) 008-057173

1.	BEZEL	025-056592
2.	CONTACT STRIP	043-056591
3.	RETAINING CLIP (3 USED)	012-053721
4.	CABLE WITH P.W.B	011-057282

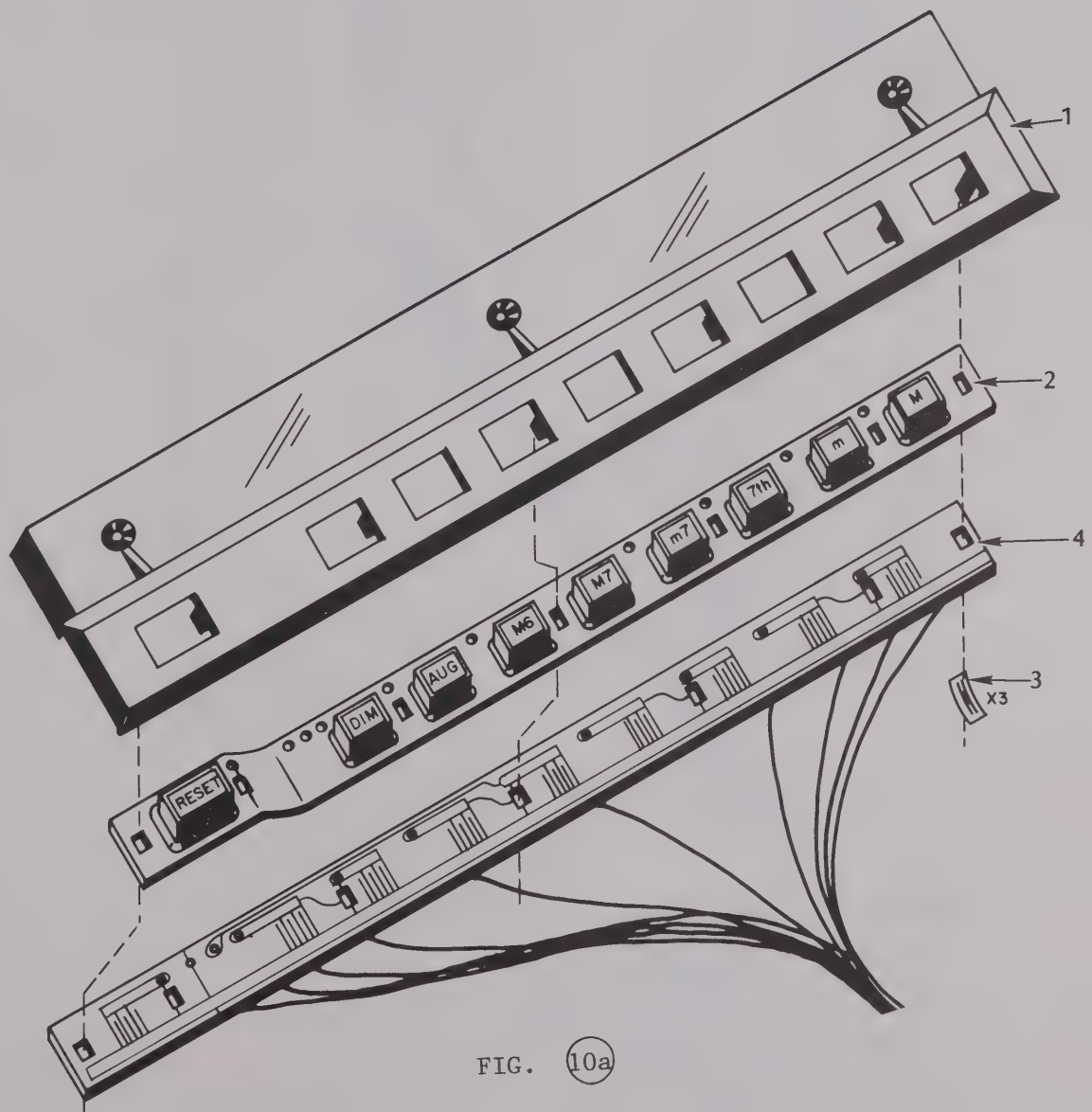


FIG. (10a)

(11)	HEADPHONE JACK	005-049363
(12)	EXPRESSION PEDAL ASSEMBLY (FIG 12a).....	123-000088
1.	BASE	025-051469
2.	GROMMET	043-045368
3.	SPEED NUT.....	013-050323
4.	LAMP SOCKET	004-053161
5.	LAMP GE657 .08A/28V	016-031751
6.	DIFFUSER.....	016-046445
7.	SHUTTER	041-055935
8.	SHUTTER SPRING	012-045361
9.	PHOTO CELL.....	040-045400
10.	CELL ADAPTER	025-045379
11.	PHOTO CELL COVER.....	025-053000
12.	COVER SCREWS	909-050734
13.	PEDAL	025-045384
14.	MAT.....	043-046347
15.	SHAFT	025-045378
16.	MOUNTING SCREWS	909-030354
17.	CLAMP.....	013-051400
18.	TERMINAL & SHIELD ASSEMBLY	060-050475
19.	SCREW (TENSION ADJUST)	885-070934
20.	CABLE ASSEMBLY	011-057643
21.	CONNECTOR.....	005-056509
22.	WAFER ASSEMBLY	005-057309

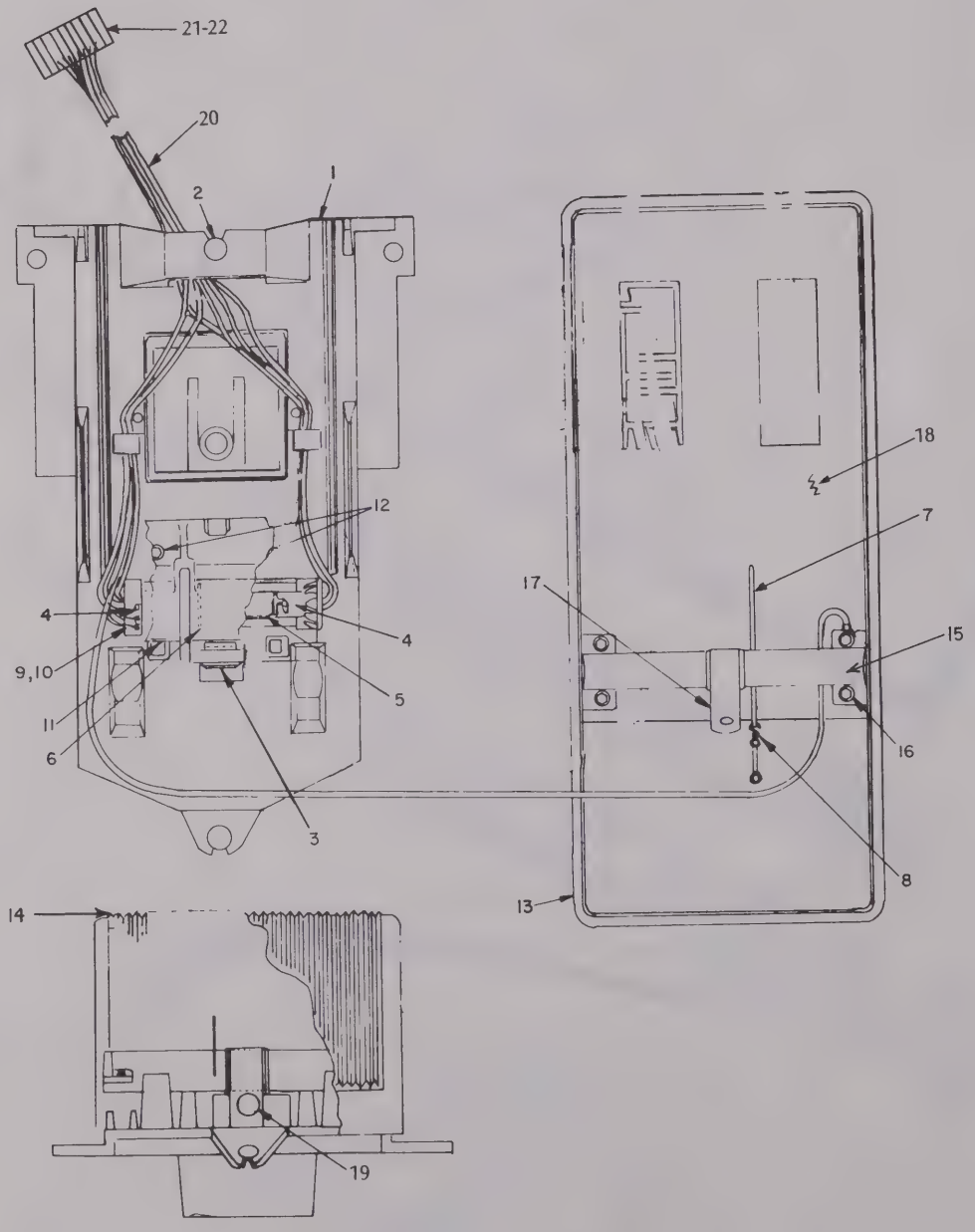


FIG. (12a)

(13.) PEDAL SWITCH ASSEMBLY (FIG 13a) 116-000038

1. PEDAL DOWNSTOP (RUBBER) (QTY. 13).....043-056579
2. PEDAL UPSTOP (FELT) 042-045439
3. PEDAL GUIDE SLEEVE FELT (QTY. 13) 042-045438
4. PEDAL NATURAL (QTY. 8).....025-045441
5. PEDAL SHARP (QTY. 5) 025-045442
6. STUD ALIGNMENT (QTY. 13) 044-045432
7. COMPRESSION SPRING (QTY. 13).....012-045430
8. RETAINER SPRING (QTY. 13) 013-045431
9. PEDAL CHASSIS 009-056680
10. SWITCH & CHANNEL ASSY.....008-056541-001
    a. SWITCH MOUNTING BRACKET 041-056582
    b. P.W.B. 023-056538
    c. 15 PIN WAFER ASSEMBLY.....005-057475
    d. PEDAL SWITCH (13 USED) 008-056685
    e. ACTUATOR (13 USED) 025-056580
    f. FOAM STRIP (2 USED).....043-057755
11. SCREWS (4 USED) 827-070318

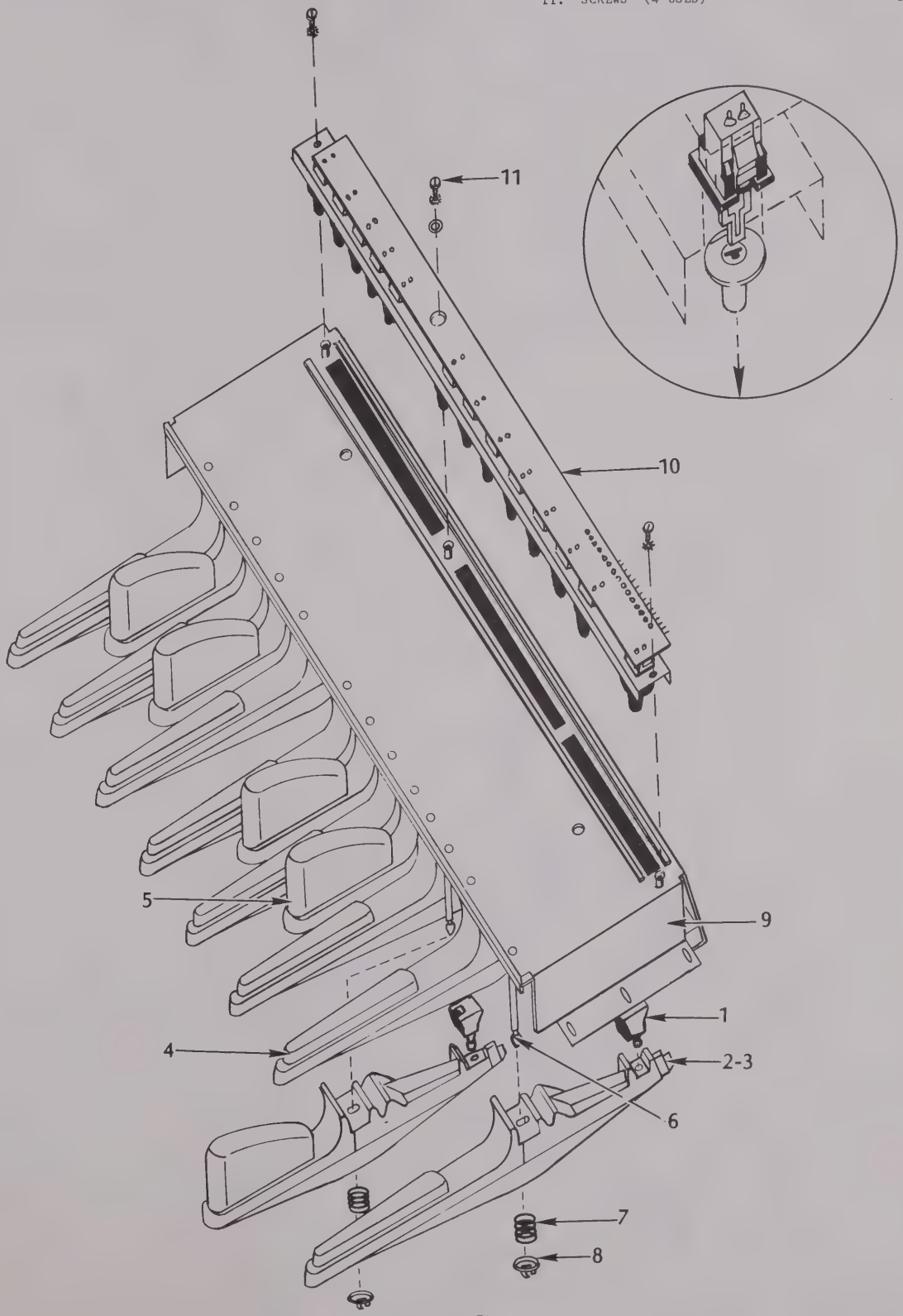


FIG. (13a)

(14) REAR COVER 056-058239

(15) REVERB UNIT WITH P.W.B. (136124 ONLY) 121-000215
1. REVERB UNIT ONLY.....121-000201
2. P.W.B. 124-000699
3. GROMMET (4 USED) 043-023844
4. EYELET (4 USED).....999-023845

(16) EXPRESSION PEDAL HOUSING 046-046386

(17) LINE CORD ASSEMBLY (DOMESTIC).....011-058442
(EARLY UNITS) 011-057663
(EXPORT) 011-054803
a. STRAIN RELIEF (EXPORT ONLY).....013-035004
b. MOUNTING BRACKET (EXPORT ONLY) 035-053356
c. BARRIER STRIP (EXPORT ONLY) 016-054825-003

(18) SPEAKER 12" 8 OHM.....014-057234

(19) POWER AMPLIFIER ASSEMBLY (FIG 19a)
(DOMESTIC) 126-000133
(EXPORT).....126-000134
1. POWER TRANSISTOR (NPN DARLINGTON) 001-021370
(PNP DARLINGTON) 001-022140
2. MOUNTING SCREW (2 USED).....827-040518
3. NUT (2 USED) 999-001049
4. INSULATOR (SHOULDER WASHER) (2 USED) 025-051026
5. MOUNTING CLIP.....013-056973
6. INSULATOR (FLAT MICA) (2 USED) 036-050837
7. P.W.B. MOUNTING SPACER (2 USED) 044-057250
8. TAP SCREW.....940-050938
9. POWER AMP P.W.B. (DOMESTIC) 124-000703
(EXPORT) 124-000704
10. HEAT SINK.....041-056791
11. FUSE (2A S.B.) (DOMESTIC) 016-039507
2A 250V (CARTRIDGE) (EXPORT) 016-050606

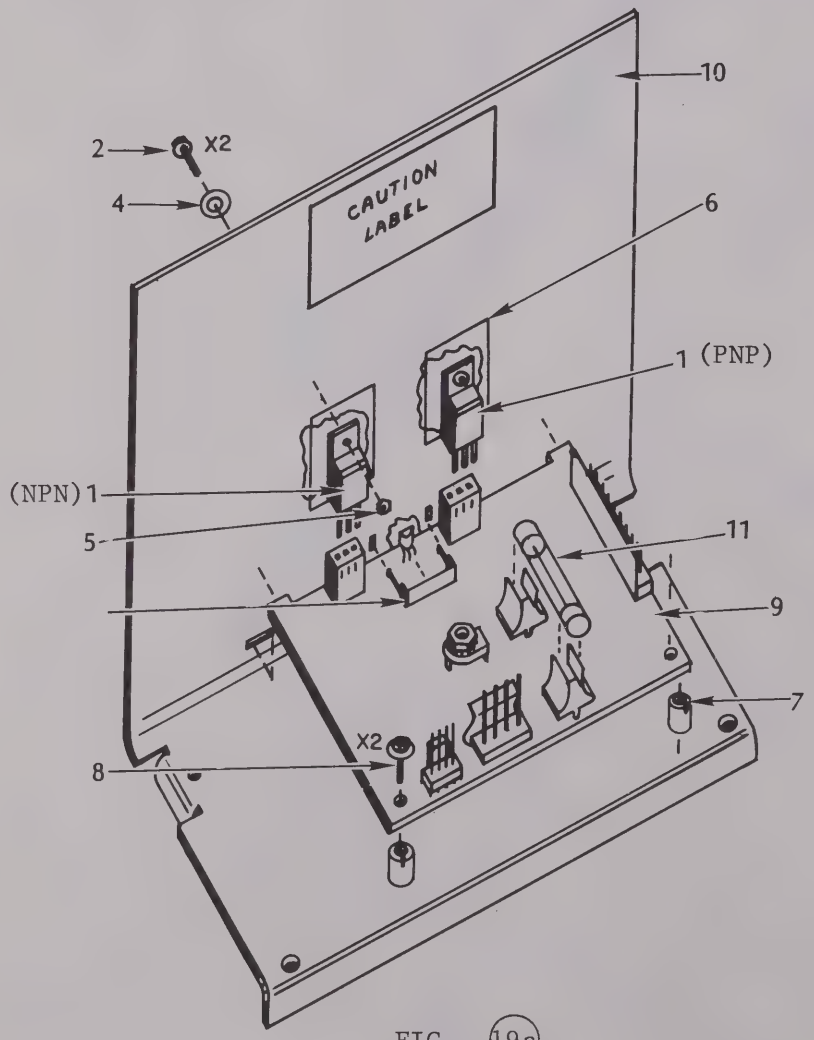


FIG. (19a)

(20) POWER TRANSFORMER ASSEMBLY (DOMESTIC)....003-058132
(EXPORT) 003-058134

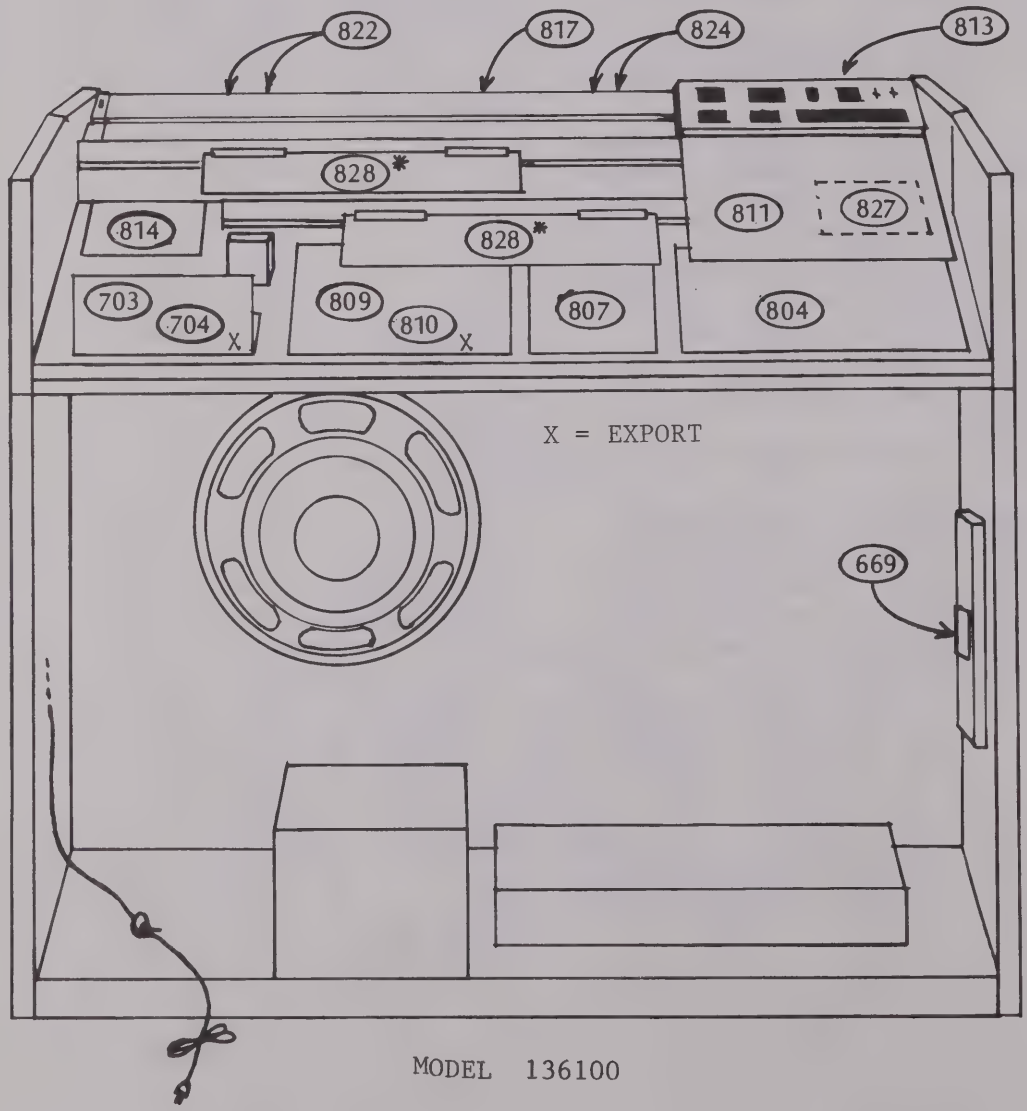
1. MOLEX PLUG (15 PIN) 005-052925
2. CONTACT PIN (7 USED).....007-030735
3. MOUNTING SCREWS 885-081138

MISCELLANEOUS PARTS

1. U.K.B. SUPPORT BRACKET (LEFT HAND)...062-053338
(RIGHT HAND) 062-053339
a. PLUG BUTTON 025-053150
2. U.K.B. HOLD DOWN BRACKET (LEFT HAND)...035-058348
(RIGHT HAND) 035-055899
3. L.K.B. SUPPORT BRACKET (2 USED) 035-054489
4. P.W.B. MOUNTING SPACER.....044-057250
5. P.W.B. MOUNTING SCREWS 885-051138
6. SPACER BLOCK 051-004533
7. SPACER BLOCK SCREW.....885-052538
8. TAB TERMINAL (8 LUG) 007-048080-004
9. U.K.B. LOCK LEVER (2 USED) 032-053128
10. KEYBOARD CABLE (EARLY UNITS ONLY).....011-058196
11. DATA BUS CABLE (136124) 011-058195
(134124) 011-058194
12. UPPER KEYBOARD BOLTS LEFT HAND.....824-121814
RIGHT HAND 824-123314
13. LOWER KEYBOARD BOLTS (2 USED) 824-121814
14. REAR COVER SCREWS (6 USED)....885-081131
15. REAR COVER FELT FOOT (3 USED) 042-029555
16. SPEAKER MOUNTING NUT (4 USED) 999-001437
17. AC CABLE CLAMP.....013-031725
18. AC POWER CABLE 011-058190
a. 6 CIRCUIT RECEPTACLE (J83) 005-052882
b. TERMINAL HOUSING (3 USED).....005-052750
c. TERMINAL (3 USED) 007-048082
d. TERMINAL (FOR J83) 007-030735
19. LINE FILTER (EARLY UNITS ONLY).....003-057657
20. DIODE INTERFACE CABLE 011-058424
21. SHIELD (FOR U.L.H.E.B.) 010-058185

699	REVERB AMP P.W.B.	124-000699
703	POWER AMP P.W.B	124-000703
704	POWER AMP P.W.B. (EXPORT)	124-000704
804	GENERATOR P.W.B.	124-000804
807	SOLOIST P.W.B	124-000807
809	POWER SUPPLY P.W.B.	124-000809
810	POWER SUPPLY P.W.B (EXPORT)	124-000810
811	UPPER LEFT HAND ENDBLOCK P.W.B.	124-000811
813	LOWER LEFT HAND ENDBLOCK P.W.B.	124-000813
815	LOWER RIGHT HAND ENDBLOCK P.W.B.	124-000815
817	KEY L.E.D. P.W.B.	124-000817
822	KEY CONTACT P.W.B. (25 NOTE)	124-000822
824	KEY CONTACT P.W.B. (19 NOTE)	124-000824
827	SINE FILTER P.W.B.	124-000827
828	KEYBOARD INTERFACE P.W.B.*	124-000828

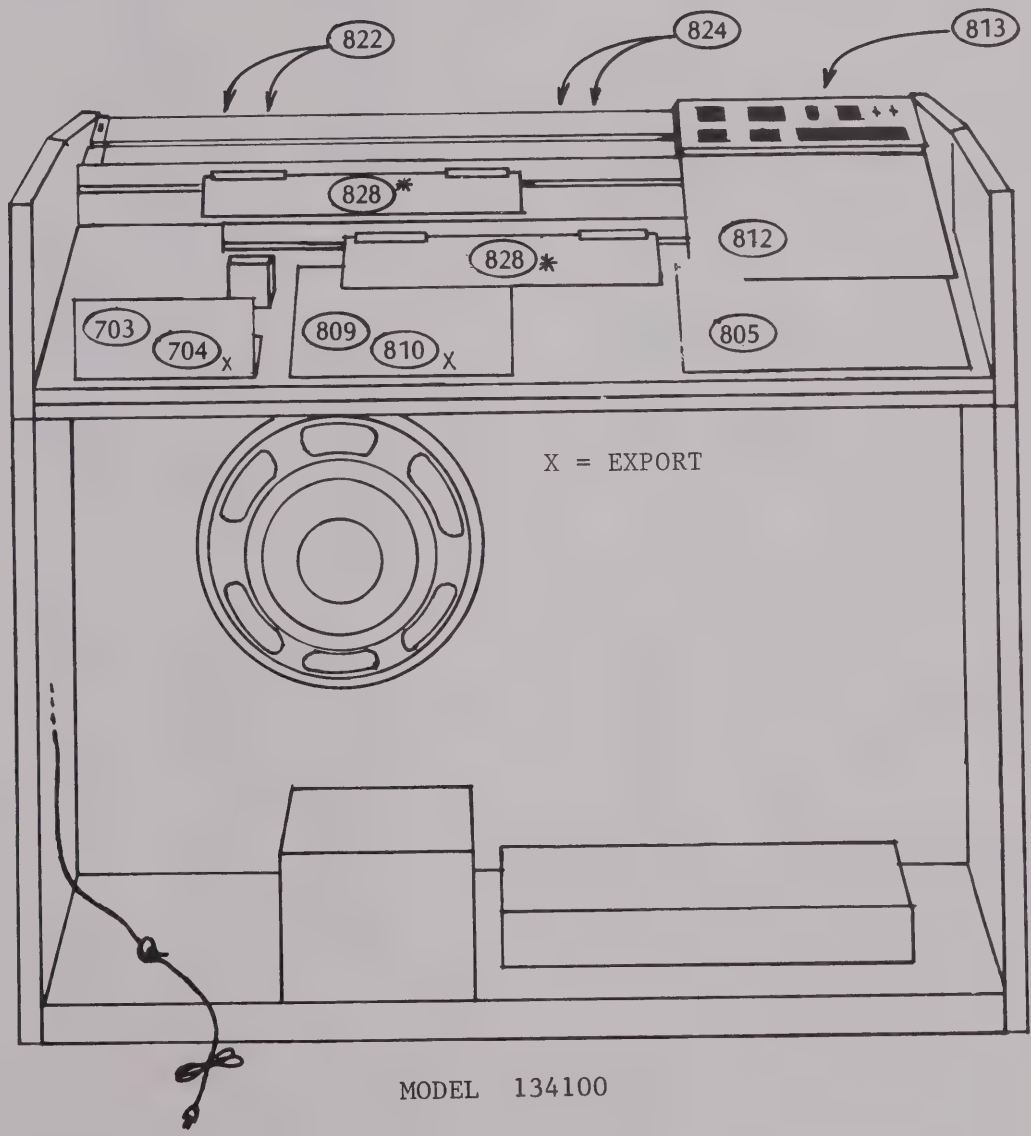
* EARLY UNITS ONLY



MODEL 136100

703	POWER AMP P.W.B.	124-000703
704	POWER AMP P.W.B. (EXPORT)	124-000704
805	GENRATOR P.W.B.	124-000805
809	POWER SUPPLY P.W.B.	124-000809
810	POWER SUPPLY P.W.B. (EXPORT)	124-000810
812	UPPER LEFT HAND ENDBLOCK P.W.B.	124-000812
813	LOWER LEFT HAND ENDBLOCK P.W.B.	124-000813
822	KEY CONTACT P.W.B. (25 NOTE)	124-000822
824	KEY CONTACT P.W.B. (19 NOTE)	124-000824
828	KEYBOARD INTERFACE P.W.B.*	124-000828

*EARLY UNITS ONLY



MODEL 134100

(699) REVERB AMP P.W.B. 124-000699

TRANSISTOR	Q4		001-021133
	Q1		001-021232
	Q3		001-021260
	Q2		001-022032
DIODE	D1,2		001-226080
9 CIRCUIT WAFER MOLEX	J9		005-056606
INTEGRATED CIRCUIT	IC 1		075-000301
CAPACITOR, ELECTROLYTIC			
	C 12	44.7MFD/50V	431-056509
	C 7	100MFD/15V	432-107159
CAPACITOR, MONOLITHIC			
	C 3,5	.10MFD	438-210253
	C 1,8	.22MFD	438-210292
	C 2	47PFD	440-210092
	C 11	120PFD	440-210142
	C 10	220PFD	440-210172
	C 9	1500PFD	440-210272
	C 4	22PFD	441-210052

(703) POWER AMP P.W.B. 124-000703

TRANSISTOR	Q1-3,6		001-021340
	Q5		001-021350
	Q4		001-022120
DIODE	D1,2		001-226080
TRANSISTOR SOCKET (FOR Q7,8)			004-056974
4 CONN MOLEX	J12		005-051169
4 CIRCUIT WAFER MOLEX	J10		005-056604
15 CIRCUIT WAFER MOLEX	J 11		005-056615
FUSE CLIP (2 USED)			013-050528
FUSE	F1		016-039507
CAPACITOR, ELECTROLYTIC			
	C 5,6	10MFD/50V	432-106509
	C 4	22MFD/50V	432-256509
	C 7	20/22 MFD/25V	433-206253
	C 1	4.7 MFD/25V	442-475252
CAPACITOR, MONOLITHIC			
	C 3	100 PFD	440-210132
	C 2	.001 MFD	440-210252
RESISTOR	R15,16	470HM 2W	601-040021
TRIMMER POT	R11	2K .2W	676-056983

(704) POWER AMP P.W.B. (EXPORT) 124-000704

TRANSISTOR	Q1-3,6		001-021340
	Q5		001-021350
	Q4		001-022120
DIODE	D1,2		001-226080
TRANSISTOR SOCKET (FOR Q 7,8)			004-056974
4 CONN MOLEX	J12		005-051169
4 CIRCUIT WAFER MOLEX	J10		005-056604
15 CIRCUIT WAFER MOLEX	J 11		005-056615
FUSE CLIP (2 USED)			013-050529
FUSE	F1		016-050606
CAPACITOR, ELECTROLYTIC			
	C 5,6	10MFD/50V	432-106509
	C 4	22MFD/50V	432-256509
	C 7	20/22MFD/25V	433-206253
	C 1	4.7MFD/25V	442-475252
CAPACITOR, MONOLITHIC			
	C 3	100PFD	440-210132
	C 2	.001MFD	440-210252
RESISTOR	R15,16	.470HM 2W	601-040021
TRIMMER POT	R11	2K .2W	676-056983

(804) GENERATOR P.W.B. 124-000804

TRANSISTOR	Q3,4,6-13	2N3391,2N3707	001-021135
	Q1,2,5	2N4123	001-021310
DIODE, ZENER	D48	6.2V 1W	001-223033
VARICAP	D1		001-026090
SIGNAL	(ALL)	1N4148	001-226080
COIL	L1		003-051656
SOCKET 40 PIN	(5 USED)		004-046770
16 PIN	(1 USED)		004-050501
8 PIN	(2 USED)		504-128010
4 CIRCUIT WAFER	J40,43		005-056604
6 CIRCUIT WAFER	J41,44		005-056606
9 CIRCUIT WAFER	J31,38,45		005-056609
12 CIRCUIT WAFER	J30,32,33		005-056612
15 CIRCUIT WAFER	J35		005-056615
18 CIRCUIT WAFER	J34,39		005-056618
22 CIRCUIT WAFER	J42		005-056622
2 CIRCUIT SHUNT CONNECTOR	J43		005-058382
CRYSTAL	Y1	8MHZ	014-058250
PRINTED NETWORK	RN 1,2	(100K)	058-053003
	RN 3-7	(15K)	058-053005
	RN 8-11	(680K)	058-053006
INTEGRATED CIRCUIT	IC 29,31		075-000084
	IC 2,3		075-000090
	IC 17-20		075-000112
	IC 35		075-000300
	IC 1,16		075-000324
	IC 15		075-000825
	IC 7		075-000826
	IC 33		075-003080
	IC 12		075-004011
	IC 30		075-004013
	IC 34		075-004016
	IC 13		075-004081
	IC 21-28,32,36		075-004156
	IC 10,11		075-004503
	IC 14		075-008243
	IC 4,5,6		075-040174
	IC 8,9		075-?4514
FLAT CABLE JUMPER	3-1/2"	(5 USED)	290-810907
	7"	(1 USED)	290-810914
CAPACITOR, ELECTROLYTIC			
C 6,12,13,15,25,40,49, 58,67,107,110,133		10MFD/50V	432-106509
C 108,109		100MFD/15V	432-107159
C 28,30,32-39,82,118		1MFD/50V	432-105502
C 41-48,50-57,59-66		2.2MFD/50V	442-225501
C 4		.47MFD/50V	442-474502
CAPACITOR, MONOLITHIC			
C 8,9,20-24,121,137, 138		.01MFD	438-210132
C 101		8200PFD	440-210362
C 17		.12MFD	440-200502
C 14,18		.15MFD	440-200512
C 126		.22MFD	440-200532
C 131		.47PFD	440-210092
C 93,99,127,128,134		100PFD	440-210132
C 102,103		150PFD	440-210152
C 73,74,80,96,111,129, 130,135,136		220PFD	440-210172
C 76,125		330PFD	440-210192
C 10		390PFD	440-210202
C 84,85,88,89,100		470PFD	440-210212
C 132		560PFD	440-210222
C 92		.001MFD	440-210252
C 123,124		1200PFD	440-210262
C 71		.0027MFD	440-210302
C 114,115		8200PFD	440-210362
C 3,5,7,11,69,95		.01MFD	440-210372
C 86		.015MFD	440-210392
C 70		.018MFD	440-210402
C 90		.027MFD	440-210422
C 16,29,75,94		.033MFD	440-210432
C 77		.039MFD	440-210442
C 78,120,122		.047MFD	440-210452
C 72,87,119		.056MFD	440-210462
C 68,98		.068MFD	440-210472
C 19,104		.082MFD	440-210482
C 79,81,83,91,97,112, 113,116,117		.1MFD	440-210492
C 1,2		100PFD	441-210132
C 27		18PFD	441-220042
C 26		4.7PFD	441-220472
RESISTOR, TRIMMER POT	R141	(100K)	676-056993

(805) GENERATOR P.W.B. 124-000805

TRANSISTOR	Q3,4,6-13	2N3391,2N3707	001-021135
	Q1,2,5	2N4123	001-021310
DIODE, ZENER	D48	6.2V 1W	001-223033
VARICAP	D1		001-026090
SIGNAL (ALL)	1N4148		001-226080
COIL	L1		003-051656
SOCKET 40 PIN	(3 USED)		004-046770
16 PIN	(1 USED)		004-050501
8 PIN	(2 USED)		504-128010
4 CIRCUIT WAFER	J43		005-056604
6 CIRCUIT WAFER	J41,44		005-056606
9 CIRCUIT WAFER	J31,38,45		005-056609
12 CICRUIT WAFER	J32		005-056612
15 CIRCUIT WAFER	J35		005-056615
18 CIRCUIT WAFER	J34,39		005-056618
22 CIRCUIT WAFER	J42		005-056622
2 CIRCUIT SHUNT CONNECTOR	J43		005-058382
CRYSTAL	Y1	8MHZ	014-058250
PRINTED NETWORK	RN 2	(100K)	058-053003
	RN 3-7	(15K)	058-053005
	RN 8,10	(680K)	058-053006
INTEGRATED CIRCUIT	IC 29,31		075-000084
	IC 2		075-000090
	IC 17,19		075-000112
	IC 35		075-000300
	IC 1,16		075-000324
	IC 15		075-000820
	IC 33		075-003080
	IC 30		075-004013
	IC 34		075-004016
	IC 21-28,32,36		075-004156
	IC 10,11		075-004503
	IC 14		075-008243
	IC 9		075-744514
FLAT CABLE JUMPER	3-1/2"	(5 USED)	290-810907
	7"	(1 USED)	290-810914
CAPACITOR, ELECTROLYTIC			
C 6,12,13,15,25,40,58, 107,110,133		10MFD/50V	432-106509
C 108,109		100MFD/15V	432-107159
C 28,30,32-39,118		1MFD/50V	442-105502
C 50-57		2.2MFD/50V	442-225501
C 4		.47MFD/50V	442-474502
CAPACITOR, MONOLITHIC			
C 8,9,20-24,121,137, 138		.01MFD	438-210132
C 101		8200PFD	440-210362
C 17		.12MFD	440-200502
C 14,18		.15MFD	440-200512
C 126		.22MFD	440-200532
C 131		.47PFD	440-210092
C 127,128,134		100PFD	440-210132
C 102,103		150PFD	440-210152
C 73,74,80,96,111,129, 130,135,136		220PFD	440-210172
C 76,125		330PFD	440-210192
C 10		390PFD	440-210202
C 100		470PFD	440-210212
C 132		560PFD	440-210222
C 123,124		1200PFD	440-210262
C 114,115		8200PFD	440-210362
C 3,5,7,11,95		.01MFD	440-210372
C 16,75,94		.033MFD	440-210432
C 78,120,122		.047MFD	440-210452
C 72,119		.056MFD	440-210462
C 19,104		.082MFD	440-210482
C 79,81,91,97,112,113, 116,117		.1MFD	440-210492
C 1,2		100PFD	441-210132
C 27		18PFD	441-220042
C 26		4.7PFD	441-220472
RESISTOR, TRIMMER POT	R141	(100K)	676-056993

(807) SOLOIST P.W.B 124-000807

TRANSISTOR	Q2,3	2N4058,2N4249	001-021173
	Q1	(DARLINGTON PAIR)	001-022103
DIODE, SIGNAL	(ALL)		001-226080
4 CIRCUIT WAFER	J51		005-056604
6 CIRCUIT WAFER	J5		005-056606
18 CIRCUIT WAFER	J50		005-056618
INTEGRATED CIRCUIT	IC 10		075-000090
	IC 9		075-000324
	IC 4,5		075-003280
	IC 14		075-004011
	IC 2,3		075-004016
	IC 7,8,11,12		075-004066
	IC 13		075-004081
	IC 1,6		075-004156
CAPACITOR, ELECTROLYTIC			
C 26		22MFD/50V	432-256509
C 36,49		1MFD/50V	442-105502
C 18		2.2MFD/50V	442-225501
C 29		1MFD/50V	443-105502
CAPACITOR, MONOLITHIC			
C 10,30,31,34		.22MFD	438-210292
C 22,23		820PFD	440-210242
C 27,28		1500PFD	440-210272
C 8,9		2200PFD	440-210292
C 38		4700PFD	440-210332
C 24,32,35,50		.01MFD	440-210372
C 2		.012MFD	440-210382
C 1		.033MFD	440-210432
C 3,4,5,11,12,20		.047MFD	440-210452
C 6,7,13-17,19,37, 39-48		.1MFD	440-210492
RESISTOR, TRIMMER POT			
R 88		(2K)	676-056983
R 103		(10K)	676-056987
R 91		(22K)	676-056989

(809) POWER SUPPLY P.W.B 124-000809

TRANSISTOR	Q1,2,3	2N4058,2N4249	001-021173
DIODE, RECTIFIER	D5-8	(3A)	001-024061
	D1-4,9,10,12	(1A)	001-224054
DIODE, SIGNAL	D11		001-226080
4 CIRCUIT CONNECTOR	J84		005-051169
PLUG & TERMINAL ASSY	J83		005-053500
RECEPTACLE & TERMINAL ASSY	J82		005-055428
9 CIRCUIT WAFER	J81		005-056609
22 CIRCUIT WAFER	J80		005-056622
FUSE CLIP	(6 USED)		013-050528
FUSE	F2,3	(2 A.S.B.)	016-039507
	F1	(1 A.S.B)	016-050547
HEAT SINK	(FOR IC 1,2)		041-057481
	(FOR IC 3)		041-058378
INTEGRATED CIRCUIT	IC 3	(-12V REG.)	075-017912
	IC 1	(5 V REG.)	075-027805
	IC 2	(+12V REG.)	075-027812
CAPACITOR, ELECTROLYTIC			
C 5,8,9		10MFD/50V	432-106509
C 12		200MFD/15V	432-208159
C 10,11		2.2MFD/50V	442-225501
C 4,6,7		3300MFD/35V	451-338359
SCREW	(3 USED)		827-040518
NUT	(3 USED)		999-001258

(811) UPPER LEFT HAND ENDBLOCK P.W.B. 124-000811

TRANSISTOR	Q2-4 2N4058,2N4249	001-021173
	Q1 (DARLINGTON PAIR)	001-022103
DIODE, RECTIFIER	D23 (1A)	001-224054
SIGNAL	(ALL)	001-226080
RELAY	RY1	003-058344
SOCKET	14 PIN	004-050500
	16 PIN (2 USED)	004-050501
4 CIRCUIT WAFER	J92	005-056604
6 CIRCUIT WAFER	J95	005-056606
9 CIRCUIT WAFER	J90	005-056609
15 CIRCUIT WAFER	J94	005-056615
18 CIRCUIT WAFER	J91,93	005-056618
SWITCH ASSEMBLY	(SW1-9)	008-055896
	(SW16-17)	008-057242
	(SW10-15)	008-057250
	(SW12-15)	008-058360
INTEGRATED CIRCUIT	IC 4,17	075-000090
	IC 1,5,7,15,16,21	075-000324
	IC 2	075-003080
	IC 11,18	075-003280
	IC 8,13	075-004001
	IC 9,14,20	075-004016
	IC 3,6,10,12,22	075-004156
	IC 19	075-013010
CAPACITOR, ELECTROLYTIC		
	C 50,72,75,106 10MFD/50V	432-106509
	C 51,52,77 100MFD/15V	432-107159
	C 6,10,44,47,81,86,90, 97,105,128,131,132, 133,138 1MFD/50V	442-105502
	C 130 2.2MFD/50V	442-225501
	C 123 1MFD/50V	443-105502
CAPACITOR, MONOLITHIC		
	C 3,85 .15MFD	440-200512
	C 11,38,40,54,62,73, 74,101,116,117,129 .22MFD	440-200532
	C 134 27PFD	440-210062
	C 87,89,95 47PFD	440-210092
	C 9,17,18,31,32,56-61, 68-71,88,94,98,135 100PFD	440-210132
	C 79,80 150PFD	440-210152
	C 64,65 180MFD	440-210162
	C 124 220PFD	440-210172
	C 137 330PFD	440-210192
	C 14,49 470PFD	440-210212
	C 63,66,140 .001MFD	440-210252
	C 45,93 1500PFD	440-210272
	C 15,16 2200PFD	440-210292
	C 84 .0027MFD	440-210302
	C 139 4700PFD	440-210332
	C 13,19,141 .0068MFD	440-210352
	C 1,37,53,55,67,76,99, 100,103,104,107,126, 127 .01MFD	440-210372
	C 109,112 .012MFD	440-210382
	C 136 .015MFD	440-210392
	C 7,108,113 .022MFD	440-210412
	C 92,96 .027MFD	440-210422
	C 111 .033MFD	440-210432
	C 82 .039MFD	440-210442
	C 4,41,42,78,91,125 .047MFD	440-210452
	C 83,102 .068MFD	440-210472
	C 2 .082MFD	440-210482
	C 12,30,35,36,39,43, 46,48,110,114,115, 118,142,143 .1MFD	440-210492
RESISTOR, TRIMMER POT		
	R 91 (10K)	676-000064
	R 33,35,43,44 (20K)	676-000065
	R 108,127 (50K)	676-000069
	R 199,217 (100K)	676-000073
	R 214 (250K)	676-000077
	R 74 (10K)	676-056987
	R 20 (22K)	676-056989
	R 220 (100K)	676-056993
	R 317 (470K)	676-056997
RESISTOR, SLIDE POT		
	R 313 (20K)	676-056194
	R 312 (DUAL 20K)	676-057480

(812) UPPER LEFT HAND ENDBLOCK P.W.B. 124-000812

TRANSISTOR	Q1 (DARLINGTON PAIR)	001-022013
DIODE, RECTIFIER	D 23 (1A)	001-224054
SIGNAL	(ALL)	001-226080
RELAY	RY1	003-058344
SOCKET	16 PIN (2 USED)	004-050501
4 CIRCUIT WAFER	J92	005-056604
6 CIRCUIT WAFER	J95	005-056606
9 CIRCUIT WAFER	J90	005-056609
15 CIRCUIT WAFER	J94	005-056615
18 CIRCUIT WAFER	J91,93	005-056618
SWITCH ASSEMBLY	(SW15-16)	008-057242
	(SW19-25)	008-057250
	(SW1-8)	008-058358
	(SW10-15)	008-058359
INTEGRATED CIRCUIT	IC 4,17	075-000090
	IC 5,15,16,21	075-000324
	IC 11,18	075-003280
	IC 14,20	075-004016
	IC 3,6,10,12,22	075-004156
CAPACITOR, ELECTROLYTIC		
	C 50,106 10MFD/50V	432-106509
	C 51,52 100MFD/15V	432-107159
	C 10,47,81,86,90,97, 105,131,132,133,138 1MFD/50V	442-105502
	C 123 1MFD/50V	443-105502
CAPACITOR, MONOLITHIC		
	C 85 .15MFD	440-200512
	C 38,54,62,101,116, 117,129 .22MFD	440-200532
	C 134 27PFD	440-210062
	C 87,89 47PFD	440-210092
	C 17,18,32,56-61, 69-71,88,94,98,135 100PFD	440-210132
	C 19 180MFD	440-210162
	C 137 330PFD	440-210192
	C 14,49 470PFD	440-210212
	C 32,140 .001MFD	440-210252
	C 93 1500PFD	440-210272
	C 15,16,122 2200PFD	440-210292
	C 84 .0027MFD	440-210302
	C 121 4700PFD	440-210332
	C 26 5600PFD	440-210342
	C 13 .0068MFD	440-210352
	C 11 8200PFD	440-210362
	C 1,21,22,37,53,55, 67,76,99,100,103,104, 107,126,127 .01MFD	440-210372
	C 136 .015MFD	440-210392
	C 24 .018MFD	440-210402
	C 23,27,108,113 .022MFD	440-210412
	C 92,96 .027MFD	440-210422
	C 111 .033MFD	440-210432
	C 25,82 .039MFD	440-210442
	C 41,42,91,120 .047MFD	440-210452
	C 83,102,119 .068MFD	440-210472
	C 12,20,36,39,43,46, 48,110,114,118 .1MFD	440-210492
RESISTOR, TRIMMER POT		
	R 91 10K	676-000064
	R 33,44 20K	676-000065
	R 127 50K	676-000069
	R 199,217 100K	676-000073
	R 214 250K	676-000077
	R 74 10K	676-056987
	R 220 100K	676-056993
SLIDE POT		
	R 313 (20K)	676-056194
	R 312 (DUAL 20K)	676-057480

(813) LOWER LEFT HAND ENDBLOCK P.W.B. 124-000813

TRANSISOTR Q2,3,4	2N3391,2N3707	001-021135
Q1	2N4058,2N4249	001-021173
Q5-Q14	2N3858	001-021314
DIODE, SIGNAL, D1-D9,D11-D20	IN4148	001-226080
L.E.D. (RED) (9 USED)		001-026181
L.E.D (CYLINDRICAL) (RED)		001-026191
6 CIRCUIT WAFER J72		005-057436
9 CIRCUIT WAFER J71		005-057439
15 CIRCUIT WAFER J70		005-057445
SWITCH BUTTON (RHY. BREAK) S10,S11		008-054887
LIGHTED PUSHBUTTON SWITCH		
(CLEAR) S2-S7		008-058240
(RED) S9		008-058241
PUSHBUTTON SWITCH (BLUE) S1,S8		008-058246
SPACER TUBE		045-054492-002
INTEGRATED CIRCUIT IC 1		075-003082
IC 3,4		075-004013
IC 2,5		075-004042
CAPACITOR, MONOLITHIC		
C 1-4,6-8,10,12,14	.01MFD	438-210132
C 9,11,16-19	.10MFD	438-210252
C 5,13,15	390PFD	440-210202
CAPACITOR, ELECTROLYTIC		
C 20,21	1MFD/50V	442-105502
RESISTOR, SLIDE POT R74 (TEMPO)	1M	676-056192
R73 (VOL)	20K	676-056194

(815) LOWER RIGHT HAND ENDBLOCK P.W.B. 124-000815

TRANSISTOR Q1-4	2N3391,2N3707	001-021135
Q5-9	2N4058,2N4249	001-021173
DIODE, ZENER D19-23	5.1V 1W	001-223030
SIGNAL D1-18,24-26	IN4148	001-226080
L.E.D. (RED) (9 USED)		001-026181
(GREEN) (3 USED)		001-026182
9 CIRCUIT WAFER J60,62		005-057439
8 CIRCUIT WAFER J61		005-057448
ROCKER SWITCH S14		008-054834
LIGHTED SWITCH (RED) S6,7		008-057602
(GREEN) S11-13		008-057604
(BLUE) S8,9		008-057606
(IVORY) S-10		008-057609
(CLEAR) S1-5		008-058240
PRINTED NETWORK RN1	100K	058-053003
INTEGRATED CIRCUIT IC 2,3		075-003081
IC 4,5		075-004042
IC 1		075-004099
FLAT CABLE JUMPER		290-810907
CAPACITOR, MONOLITHIC		
C 1,3,4,10-12	.01MFD	438-210132
C 5-9	.10MFD	438-210252
CAPACITOR, ELECTROLYTIC		
C 2	1MFD/50V	442-105502
RESISTOR, SLIDE POT (VOL & REV)	20K	676-056194

(817) KEY L.E.D. P.W.B. 124-000817

L.E.D (CYLINDRICAL) (RED) (13 USED)		001-026191
9 CIRCUIT WAFER J19		005-057439
SPACER TUBE (13 USED)		045-054492-001
INTEGRATED CIRCUIT IC 2,3		075-003081
IC 1,4		075-004099
CAPACITOR, MONOLITHIC		
C 1,2	.10MFD	438-210253

(822) KEY CONTACT P.W.B. 25 NOTE 124-000822

DIODE (25 USED)		001-226080
4 CIRCUIT WAFER (RIGHT ANGLE)		005-057434
15 CIRCUIT WAFER (RIGHT ANGLE)		005-057445
BUS WIRE (6.8")		029-058427
BUS WIRE (6.3")		029-058428
SPRING CONTACT ASSY. (25 USED)		030-045698
RIVET PLATE (25 USED)		041-047677
BUS RETAINER (8 USED)		041-058426
GROMMET, SPACER (5 USED)		043-045668
SPACER (5 USED)		044-045669-001
EYELET (50 USED)		999-026705

(824) KEY CONTACT P.W.B. 19 NOTE 124-000824

DIODE (19 USED)		001-226080
4 CIRCUIT WAFER (RIGHT ANGLE)		005-057434
15 CIRCUIT WAFER (RIGHT ANGLE)		005-057445
BUS WIRE (6.3")		029-058428
BUS WIRE (3.6")		029-058429
SPRING CONTACT ASSY. (19 USED)		030-045698
RIVET PLATE (19 USED)		041-047677
BUS RETAINER (7 USED)		041-058426
GROMMET, SPACER (5 USED)		043-045668
SPACER (5 USED)		044-045669-001
EYELET (38 USED)		999-026705

(828) KEYBOARD INTERFACE P.W.B. 124-000828

DIODE,SIGNAL (ALL)		001-226080
24 CIRCUIT CONNECTOR J1,2		005-049230-001
9 CIRCUIT WAFER J15		005-056609
15 CIRCUIT WAFER J16		005-056615
INTEGRATED CIRCUIT IC 1-12		075-004081
CAPACITOR, MONOLITHIC		
C 1,2	.10MFD	438-210252

(327) SINE FILTER P.W.B. 124-000827

TRANSISTOR (ALL) 2N5376		001-021261
9 CIRCUIT WAFER J544,545		005-056609
CAPACITOR, ELECTROLYTIC		
C 69	10MFD/50V	432-106509
CAPACITOR, MONOLITHIC		
C 39	.018MFD	438-210162
C 28	.056MFD	438-210222
C 20	.082MFD	438-210242
C 11,19	.22MFD	438-210292
C 56	150PFD	440-210152
C 46	180PFD	440-210162
C 36	330PFD	440-210192
C 27,70	470PFD	440-210212
C 18,51-55,68	.001MFD	440-210252
C 41-45	3300PFD	440-210312
C 50	.0039MFD	440-210322
C 58	4700PFD	440-210332
C 31-35	5600PFD	440-210342
C 40	.012MFD	440-210382
C 22-26,30,37,48	.015MFD	440-210392
C 13-17,21	.033MFD	440-210432
C 12,29,71	.047MFD	440-210452

SECTION VII
APPENDIX

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Generation System Block Diagram (136100)	7-3
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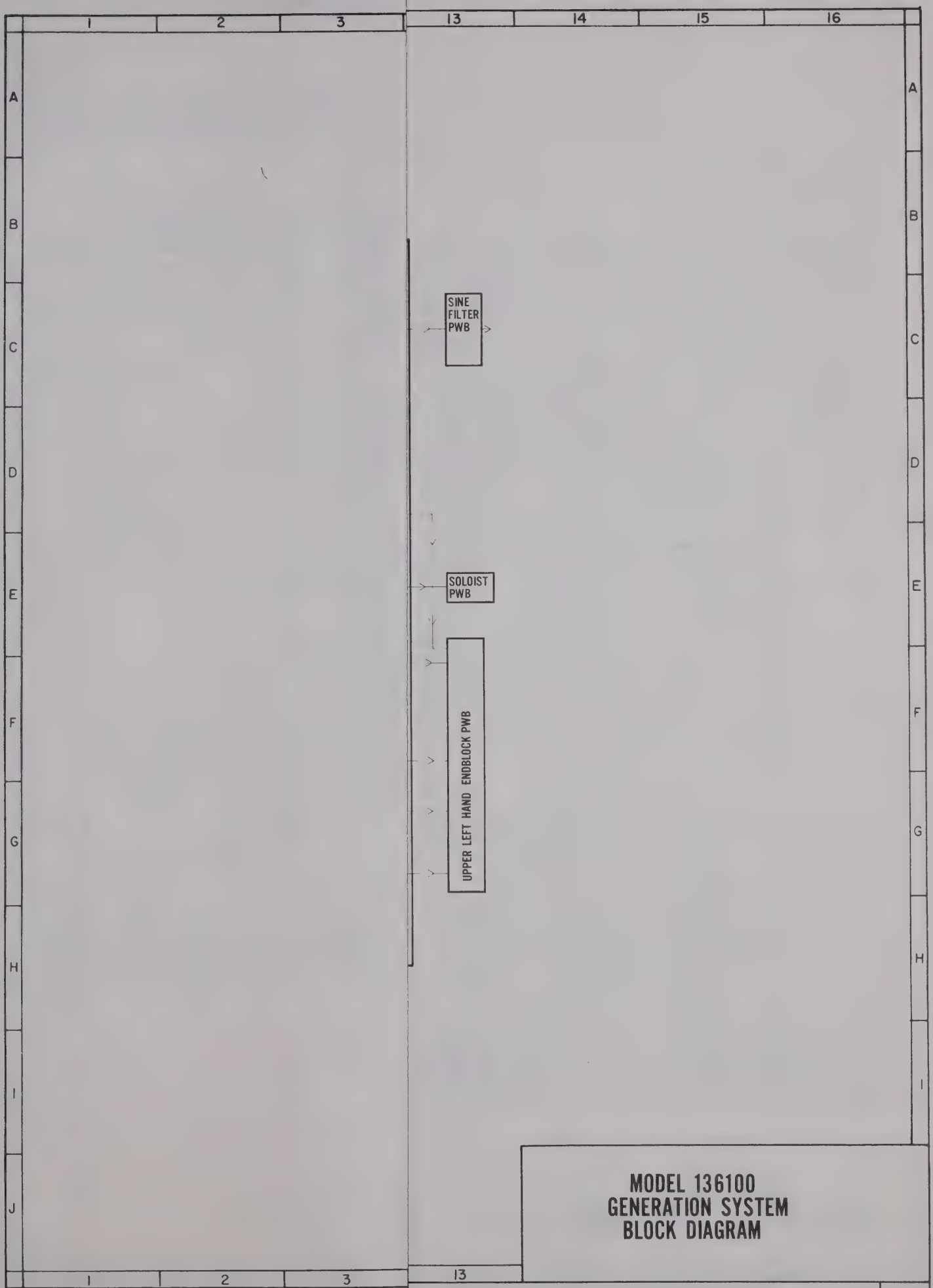
Model 134100 Logic and Control Wiring Diagram	7-6

CHORD STRUCTURE REFERENCE CHART

CHORD	FRONT STRIP KEY INDICATORS												
	F	F#	G	Ab	A	Bb	B	C	Db	D	Eb	E	F
F M	●				●			●					●
F m				●				●					●
F 7th					●			●			●		●
F m7				●				●			●		●
F M7	●				●			●				●	●
F M6					●			●		●			●
F AUG					●				●				●
F DIM				●			●			●			●
F# M		●				●			●				
F# m		●			●				●				
F# 7th		●				●			●			●	
F# m7		●			●				●			●	
F# M7		●				●			●				●
F# M6		●				●			●		●		
F# AUG		●				●				●			
F# DIM		●			●			●			●		
G M			●				●			●			
G m			●			●				●			
G 7th			●				●			●			●
G m7			●			●	○			●	○		●
G M7		●	●				●			●			
G M6			●				●			●		●	
G AUG			●				●				●		
G DIM			●			●			●			●	
Ab M				●				●			●		
Ab m				●			●				●		
Ab 7th		●		●				●			●		
Ab m7		●		●			●				●		
Ab M7			●	●				●			●		
Ab M6	●			●				●			●		
Ab AUG				●				●				●	
Ab DIM				●			●			●			●
A M					●				●			●	
A m					●			●				●	
A 7th			●		●				●			●	
A m7			●		●			●				●	
A M7				●	●				●			●	
A M6		●			●				●			●	
A AUG					●				●				●
A DIM		●			●			●			●		
Bb M						●				●			●
Bb m						●			●				●
Bb 7th				●		●				●			●
Bb m7				●		●			●				●
Bb M7					●	●				●			●
Bb M6			●			●				●			●
Bb AUG		●				●				●			
Bb DIM			●			●			●			●	
B M		●					●				●		
B m		●					●			●			
B 7th		●			●		●				●		
B m7		●			●		●			●			
B M7		●				●	●				●		
B M6		●		●			●				●		
B AUG			●				●				●		
B DIM				●			●			●			●

CHORD	FRONT STRIP KEY INDICATORS												
	F	F#	G	Ab	A	Bb	B	C	Db	D	Eb	E	F
C M			●					●				●	
C m			●					●			●		
C 7th			●			●		●				●	
C m7			●			●		●			●		
C M7			●				●	●				●	
C M6			●		●			●				●	
C AUG				●				●				●	
C DIM		●			●			●			●		
Db M				●					●				●
Db m				●					●			●	
Db 7th				●			●		●				●
Db m7				●			●		●			●	
Db M7				●				●	●				●
Db M6				●		●			●				●
Db AUG					●				●				●
Db DIM			●			●			●			●	
D M		●			●					●			
D m					●					●			●
D 7th		●			●			●		●			
D m7					●			●		●			●
D M7		●			●				●	●			
D M6		●			●		●			●			
D AUG		●				●				●			
D DIM				●			●			●			●
Eb M			●			●					●		
Eb m		●				●					●		
Eb 7th			●			●			●		●		
Eb m7		●				●			●		●		
Eb M7			●			●				●	●		
Eb M6			●			●		●			●		
Eb AUG			●				●				●		
Eb DIM		●			●			●			●		
E M				●			●					●	
E m			●				●					●	
E 7th				●			●			●		●	
E m7			●				●			●		●	
E M7				●			●				●	●	
E M6				●			●		●			●	
E AUG				●				●				●	
E DIM			●			●			●			●	
F M	●				●			●					●
F m				●				●					●
F 7th					●			●			●		●
F m7				●				●			●		●
F M7	●				●			●				●	
F M6					●			●		●			●
F AUG					●				●				●
F DIM				●			●			●			●

○ = LED not illuminated ● = LED illuminated



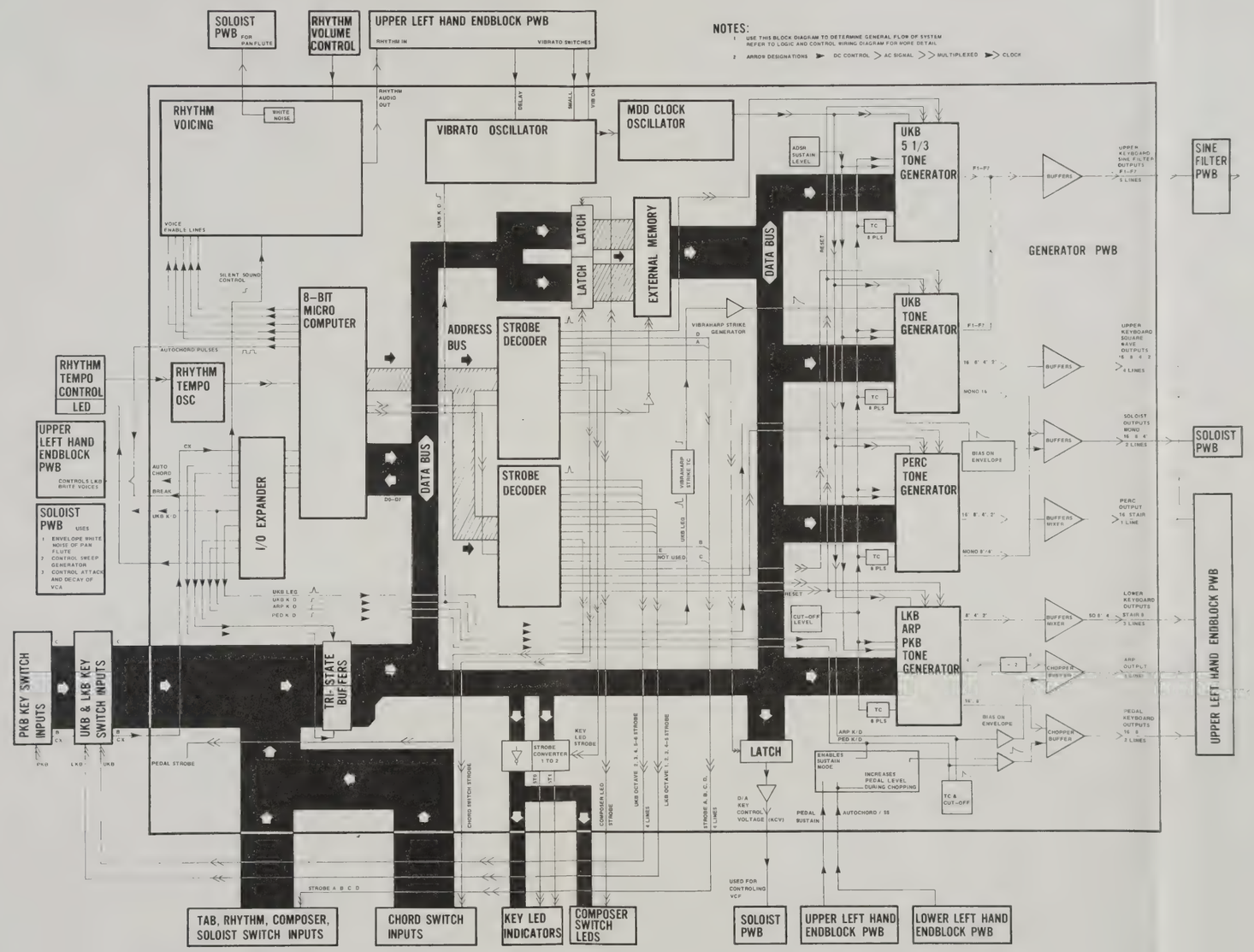
MODEL 136100 GENERATION SYSTEM BLOCK DIAGRAM

CHORD STRUCTURE REFERENCE CHART

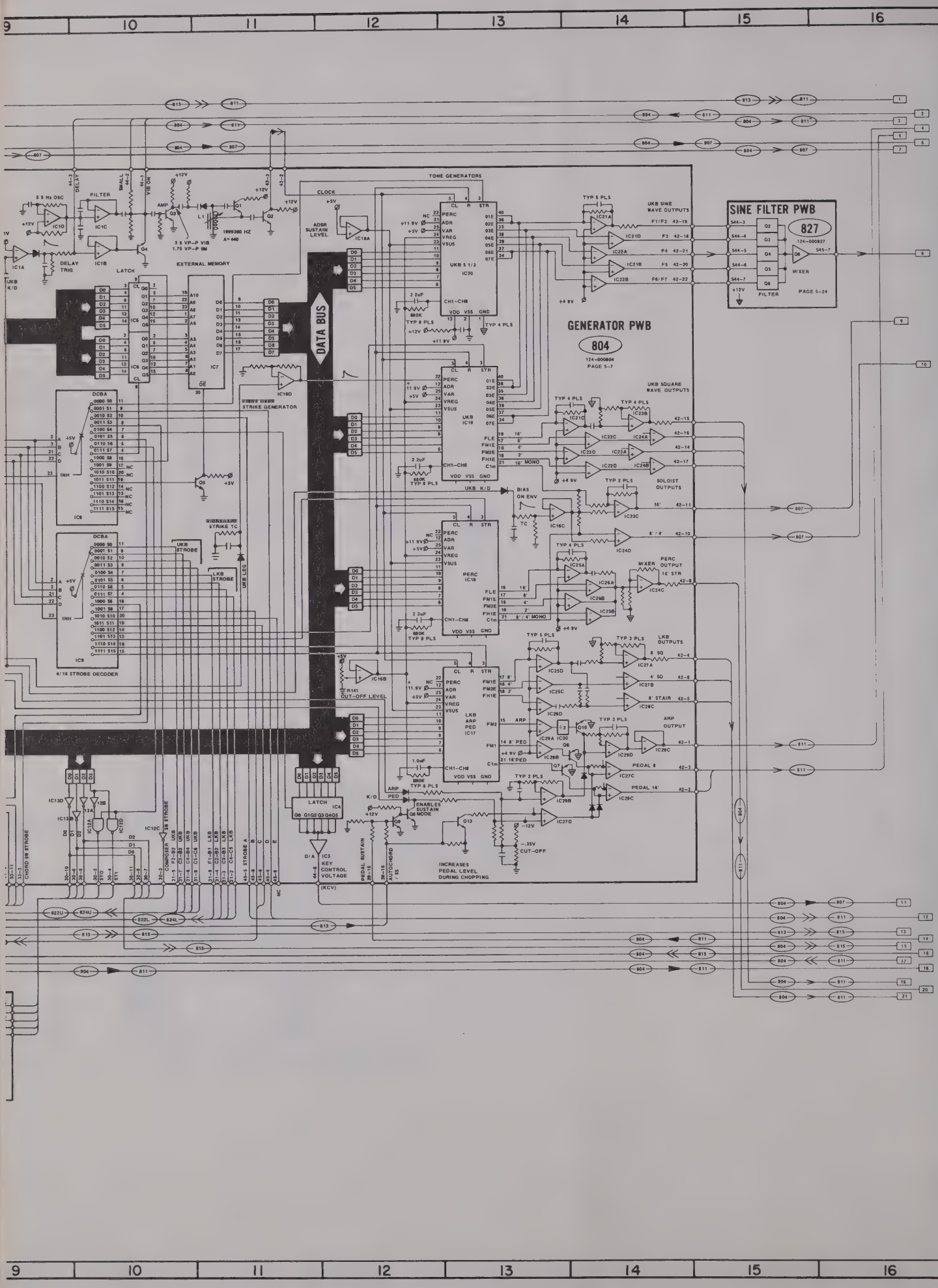
	FRONT STRIP KEY INDICATORS											
CHORD	F	F#	G	Ab	A	Bb	B	C	Db	D	Eb	E	F
F M	●				●			●					●
F m				●				●					●
F 7th					●			●			●		●
F m7				●				●			●		●
F M7	●				●			●				●	
F M6					●			●		●			●
F AUG					●				●				●
F DIM				●			●			●			●
F# M		●				●			●				
F# m		●			●				●				
F# 7th		●				●			●			●	
F# m7		●			●				●			●	
F# M7		●				●			●				●
F# M6		●				●			●		●		
F# AUG		●				●				●			
F# DIM		●			●			●			●		
G M			●				●			●			
G m			●			●				●			
G 7th			●				●			●			●
G m7			●			●	○			●	○		●
G M7		●	●				●			●			
G M6			●				●			●		●	
G AUG			●				●				●		
G DIM			●			●			●			●	
Ab M				●				●			●		
Ab m				●			●				●		
Ab 7th		●		●				●			●		
Ab m7		●		●			●				●		
Ab M7			●	●				●			●		
Ab M6	●			●				●			●		
Ab AUG				●				●				●	
Ab DIM				●			●			●			●
A M					●				●			●	
A m					●			●				●	
A 7th			●		●				●			●	
A m7			●		●			●				●	
A M7				●	●				●			●	
A M6		●			●				●			●	
A AUG					●				●				●
A DIM		●			●			●			●		
Bb M						●				●			●
Bb m						●			●				●
Bb 7th				●		●				●			●
Bb m7				●		●			●				●
Bb M7					●	●				●			●
Bb M6			●			●				●			●
Bb AUG		●				●				●			
Bb DIM			●			●			●			●	
B M		●					●				●		
B m		●					●			●			
B 7th		●			●		●				●		
B m7		●			●		●			●			
B M7		●				●	●				●		
B M6		●		●			●				●		
B AUG			●				●				●		
B DIM				●			●			●			●

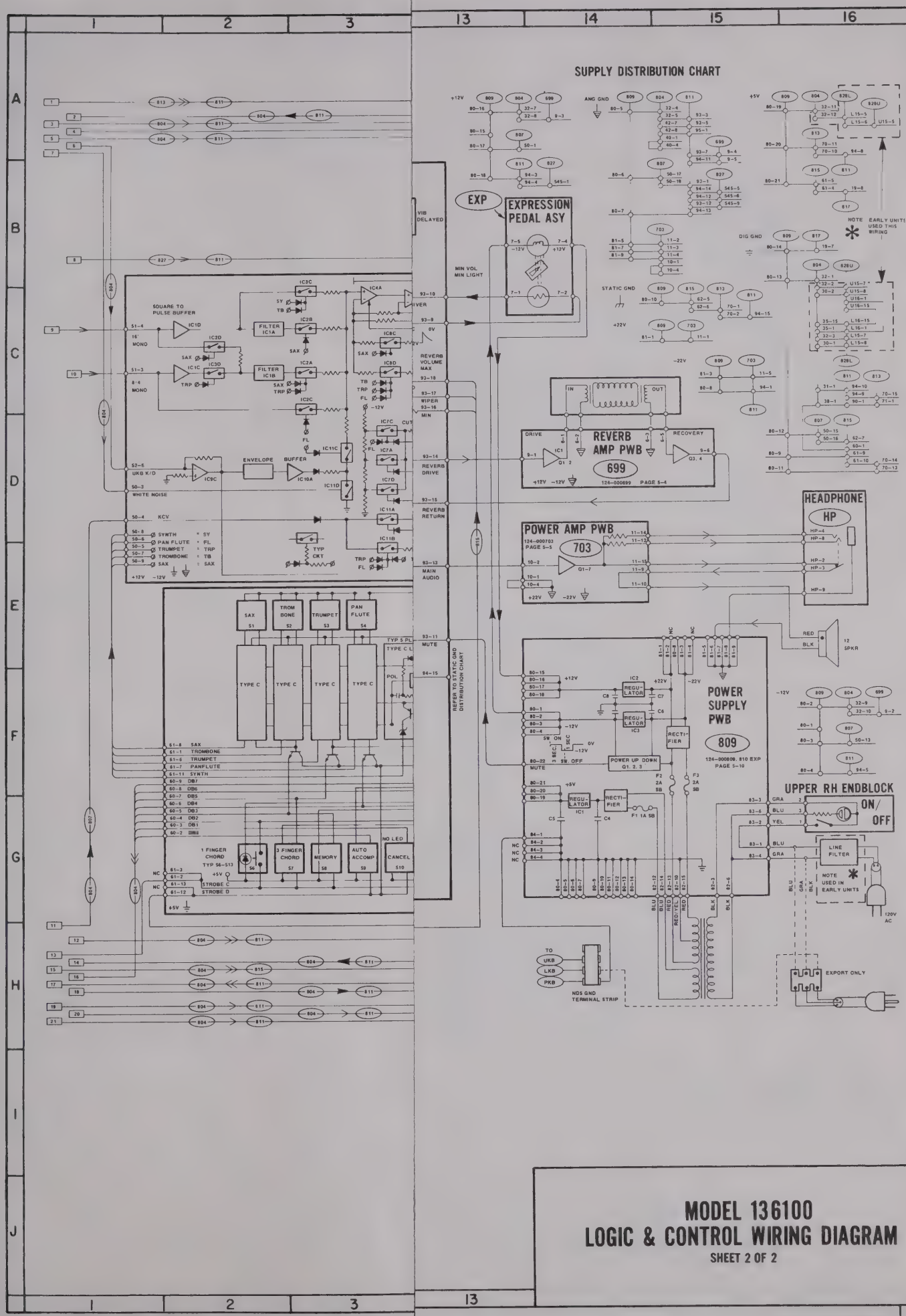
	FRONT STRIP KEY INDICATORS											
CHORD	F	F#	G	Ab	A	Bb	B	C	Db	D	Eb	E	F
C M			●					●				●	
C m			●					●			●		
C 7th			●			●		●				●	
C m7			●			●		●			●		
C M7			●				●	●				●	
C M6			●		●			●				●	
C AUG				●				●				●	
C DIM		●		●				●			●		
Db M				●					●				●
Db m				●					●			●	
Db 7th				●			●		●				●
Db m7				●			●		●			●	
Db M7				●				●	●				●
Db M6				●		●			●				●
Db AUG					●				●				●
Db DIM			●			●			●			●	
D M		●			●					●			
D m					●					●			●
D 7th		●			●			●		●			
D m7					●			●		●			●
D M7		●			●				●	●			
D M6		●			●		●			●			
D AUG		●				●				●			
D DIM				●			●			●			●
Eb M			●				●				●		
Eb m		●					●				●		
Eb 7th			●				●				●		
Eb m7		●					●				●		
Eb M7			●				●			●	●		
Eb M6			●				●		●		●		
Eb AUG			●			●			●		●		
Eb DIM		●			●			●			●		
E M				●			●					●	
E m			●				●					●	
E 7th				●			●			●		●	
E m7			●				●			●		●	
E M7				●			●				●	●	
E M6				●			●		●			●	
E AUG				●				●				●	
E DIM			●			●			●			●	
F M	●				●			●					●
F m				●				●					●
F 7th					●			●			●		●
F m7					●			●			●		●
F M7	●				●			●				●	
F M6					●			●		●			●
F AUG					●				●				●
F DIM				●			●			●			●

○ = LED not illuminated ● = LED illuminated

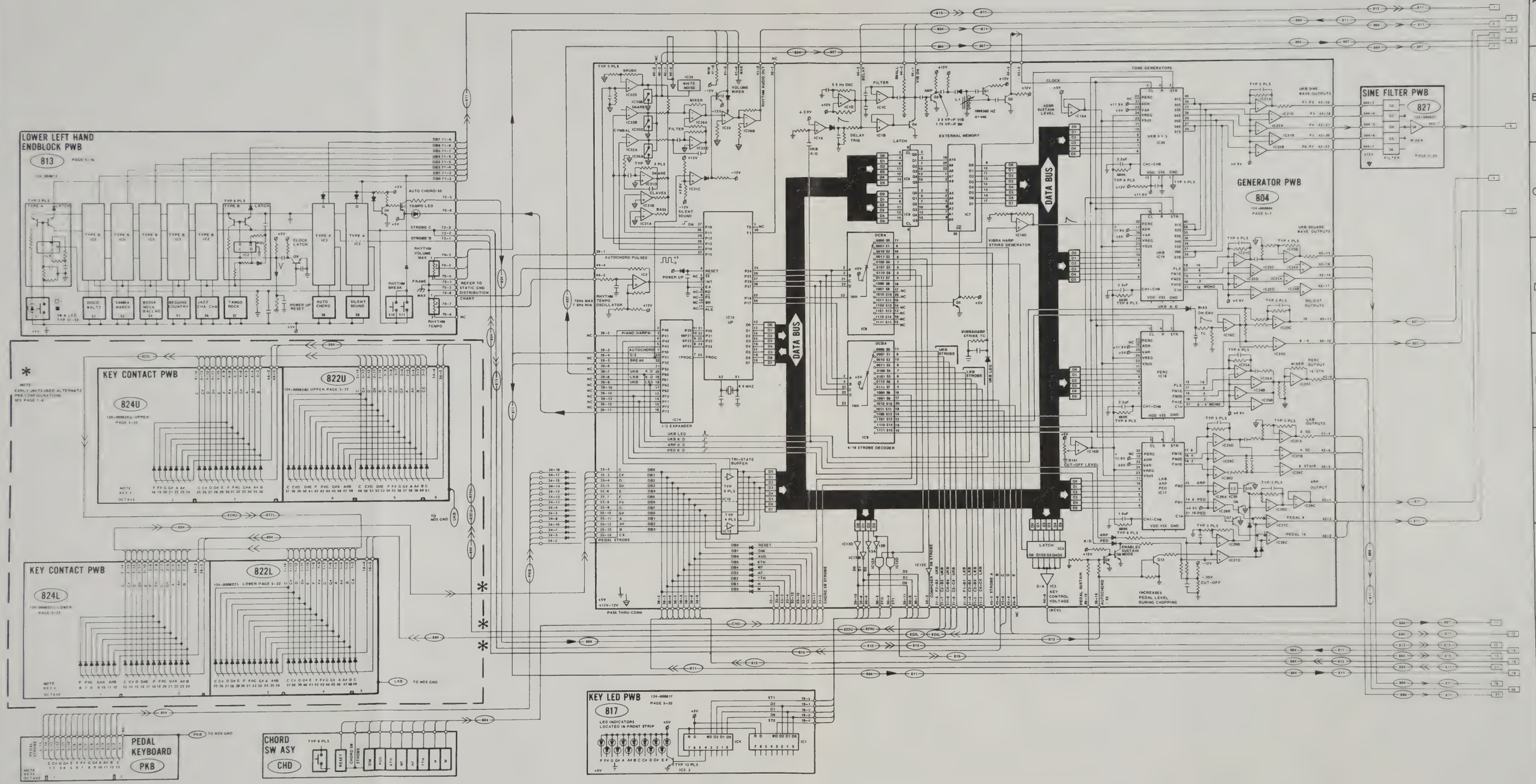


MODEL 136100 GENERATION SYSTEM BLOCK DIAGRAM

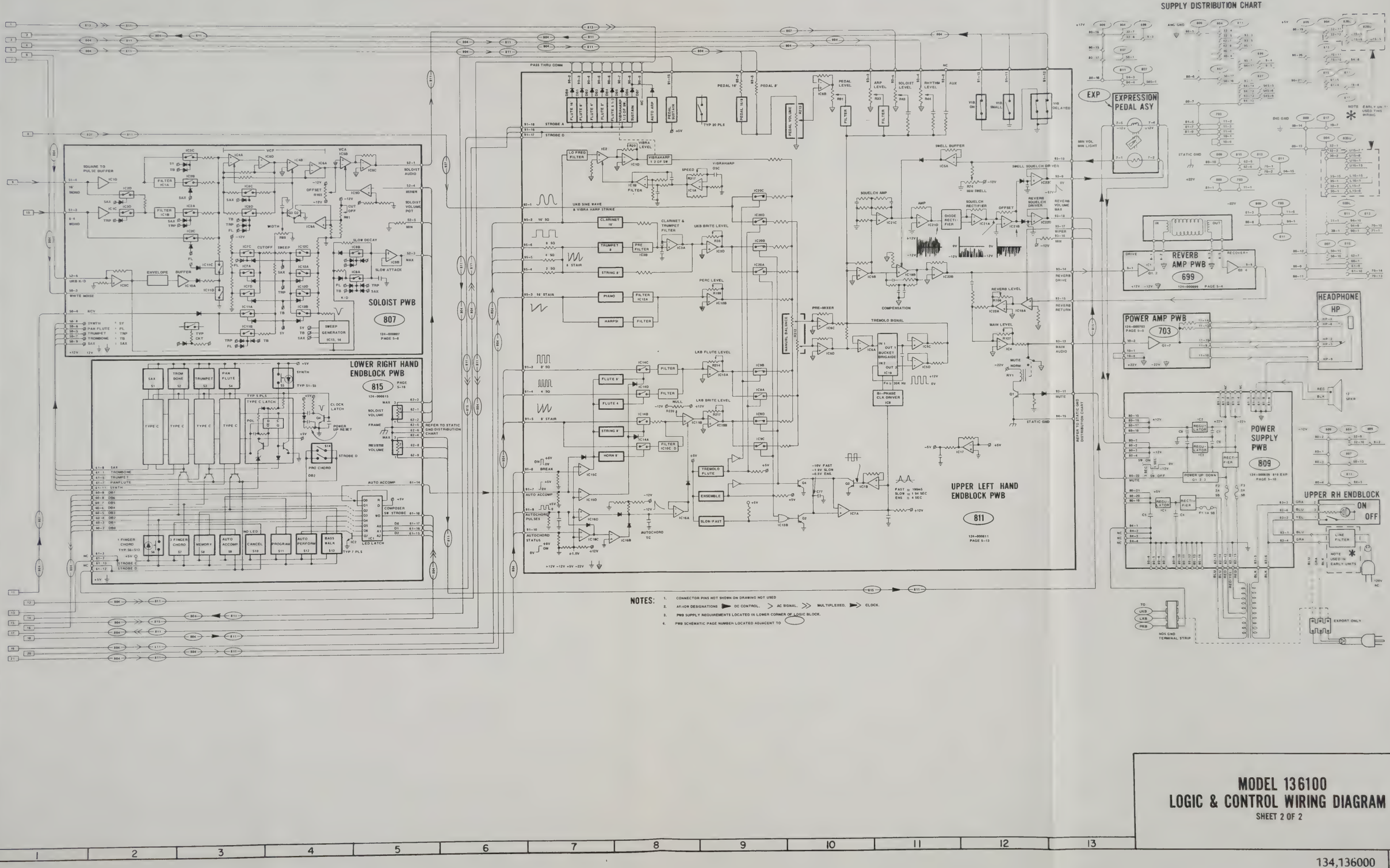

GENERATOR PWB
804
124-000804
PAGE 5-7
SINE FILTER PWB
827
124-000827
PAGE 5-24
DATA BUS
TONE GENERATORS
UKB SINE WAVE OUTPUTS
UKB SQUARE WAVE OUTPUTS
SOLOIST OUTPUTS
LKB OUTPUTS
MIXER
FILTER
DELAY
LATCH
EXTERNAL MEMORY
STRIKE GENERATOR
4/16 STROBE DECODER
KEY CONTROL VOLTAGE
ENABLES SUSTAIN MODE
INCREASES PEDAL LEVEL DURING CHOPPING
CUT-OFF



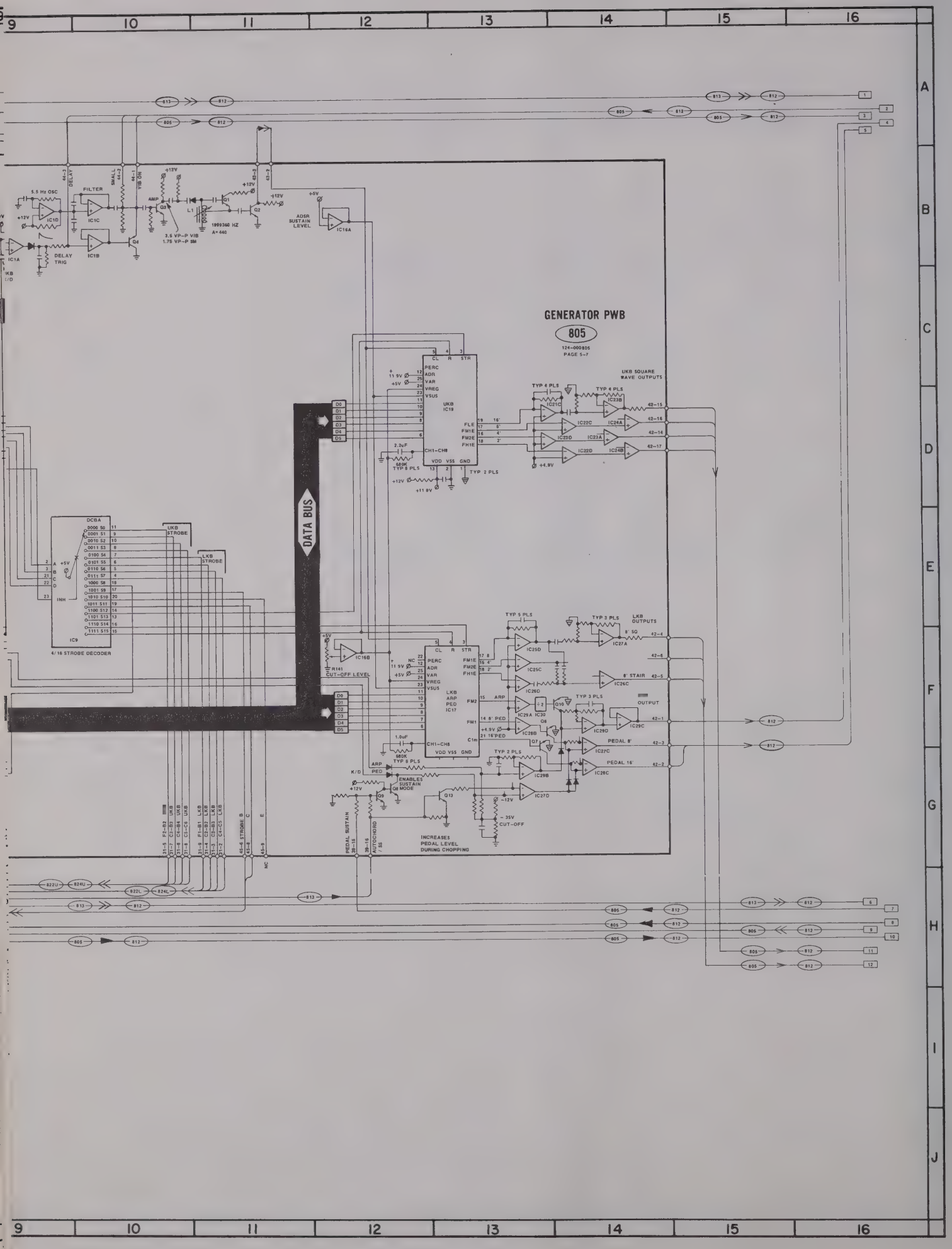
MODEL 136100
LOGIC & CONTROL WIRING DIAGRAM
SHEET 2 OF 2

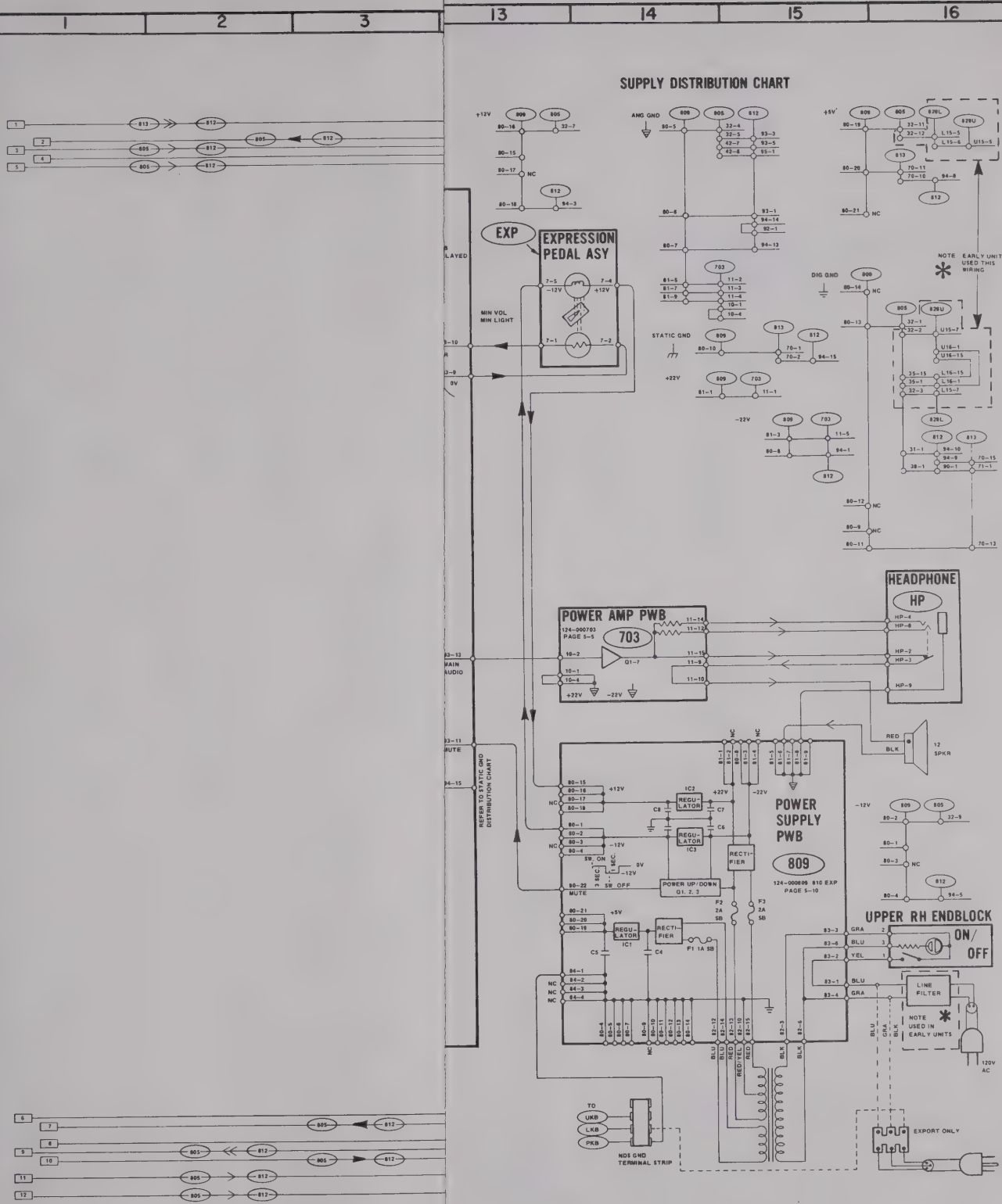


MODEL 136100
LOGIC & CONTROL WIRING DIAGRAM
SHEET 1 OF 2



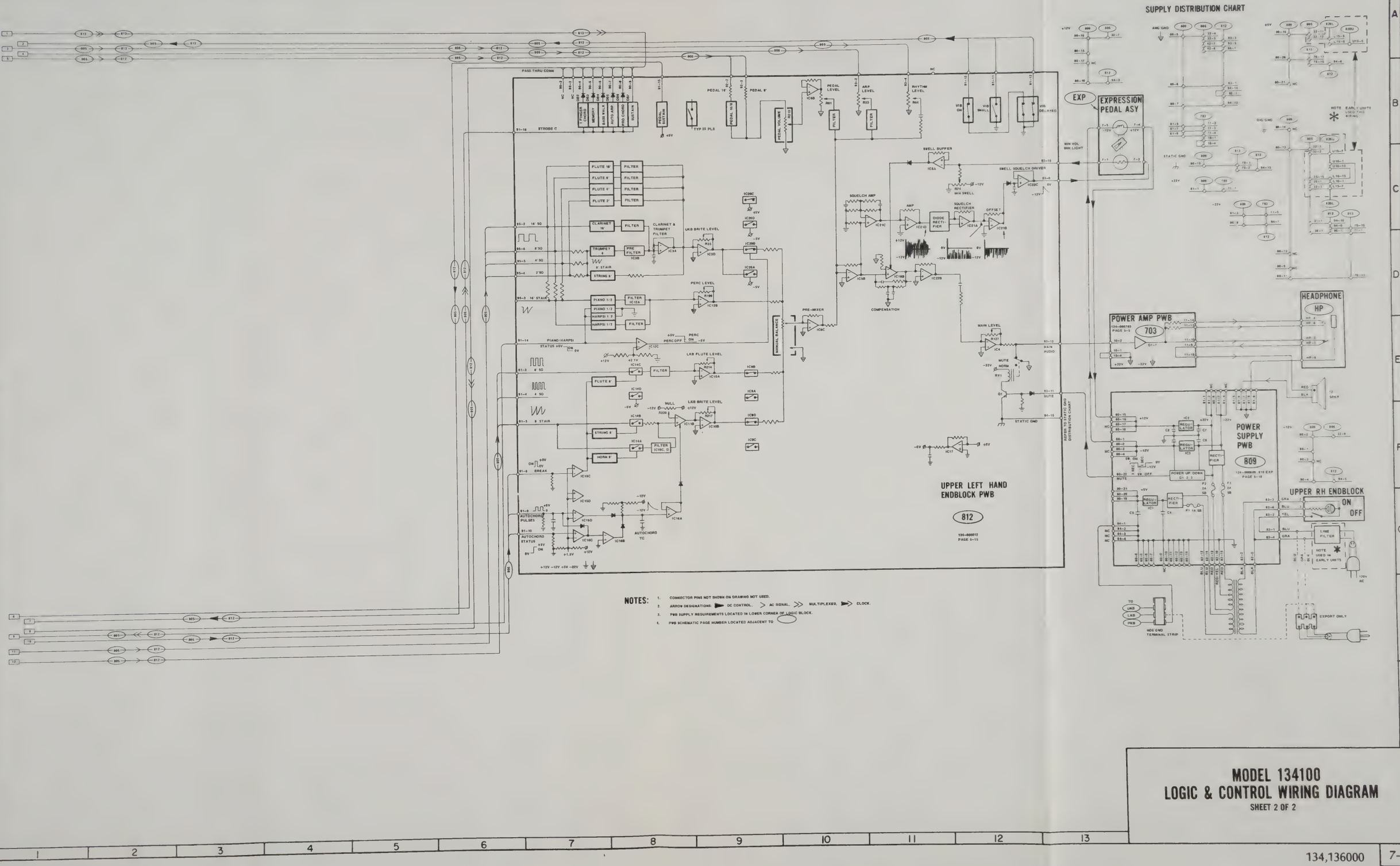
MODEL 136100
LOGIC & CONTROL WIRING DIAGRAM
SHEET 2 OF 2


GENERATOR PWB
805
124-000805
PAGE 5-7
DATA BUS
LKB SQUARE WAVE OUTPUTS
LKB OUTPUTS
UKB STROBE
LKB STROBE
4/16 STROBE DECODER
CUT-OFF LEVEL
ENABLES SUSTAIN ON MODE
INCREASES PEDAL LEVEL DURING CHOPPING
PEDAL 8'
PEDAL 16'
8' STAIR
OUTPUT
PEDAL SUSTAIN
AUTOCHORD / SS
FILTER
DELAY TRIG
ADSR SUSTAIN LEVEL
5.5 Hz OSC
3.5 VP-P VIB
1.75 VP-P SW
1999360 HZ
A=440

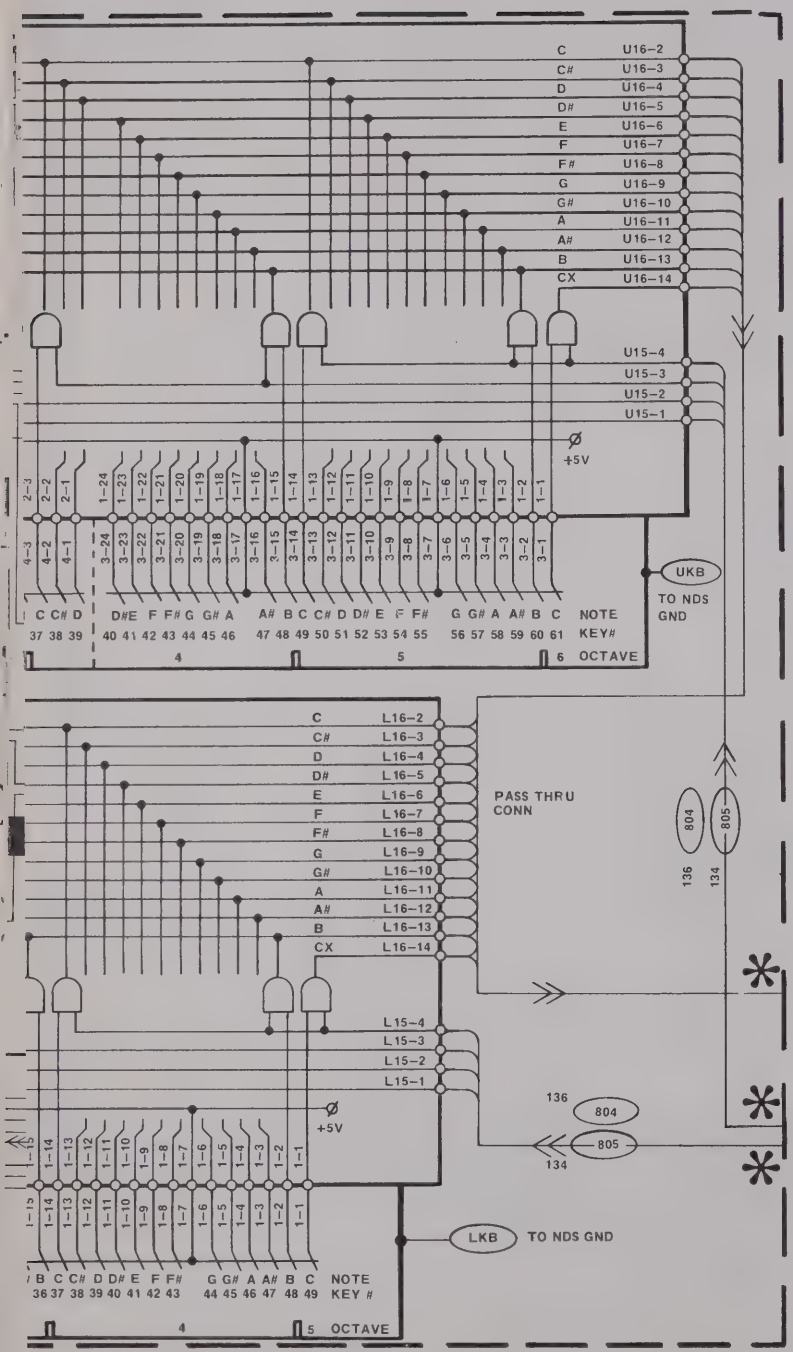


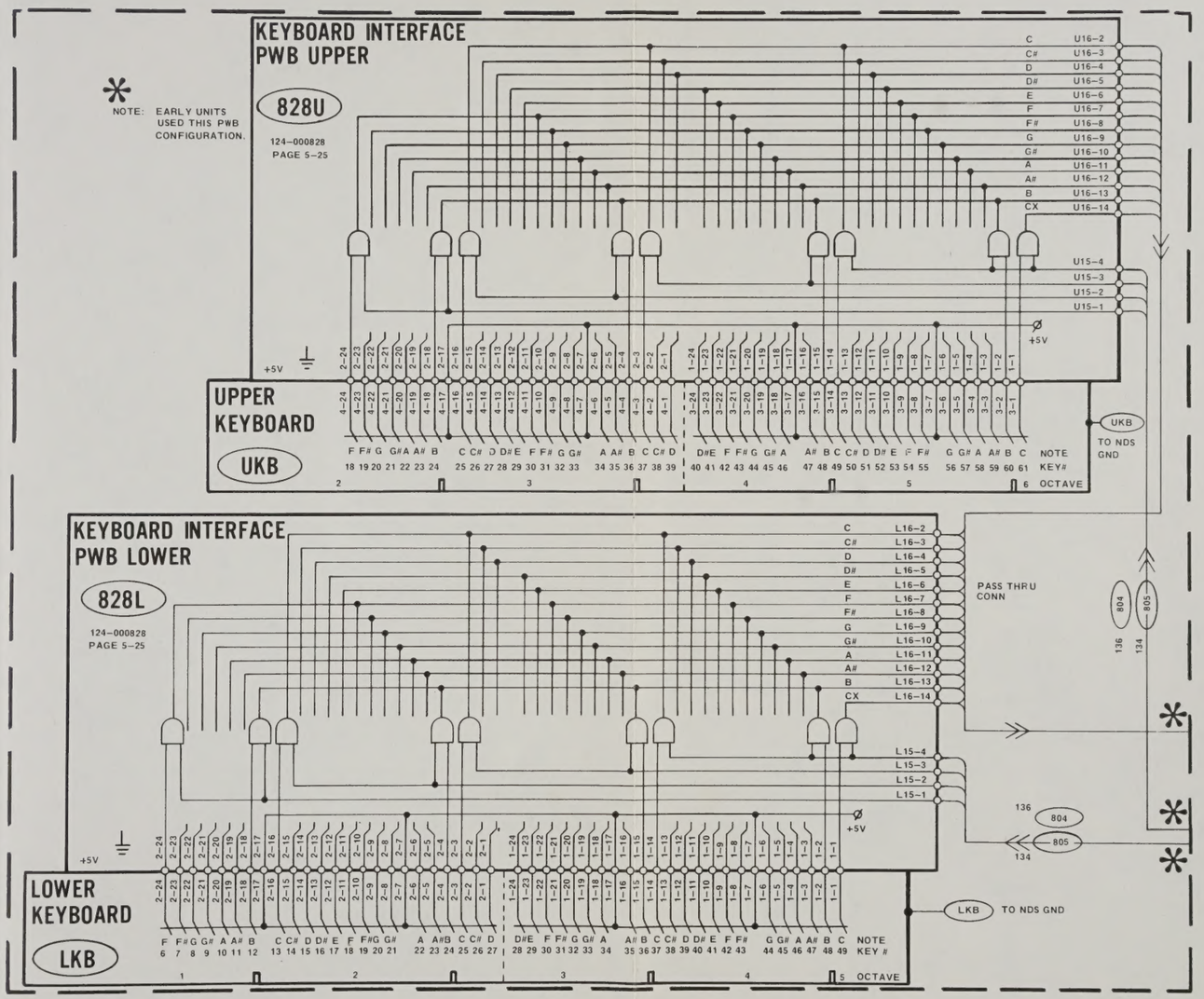
MODEL 134100
LOGIC & CONTROL WIRING DIAGRAM
SHEET 2 OF 2

MODEL 134100
LOGIC & CONTROL WIRING DIAGRAM
SHEET 1 OF 2



MODEL 134100
LOGIC & CONTROL WIRING DIAGRAM
SHEET 2 OF 2


C U16–2
C# U16–3
D U16–4
D# U16–5
E U16–6
F U16–7
F# U16–8
G U16–9
G# U16–10
A U16–11
A# U16–12
B U16–13
CX U16–14
U15–4
U15–3
U15–2
U15–1
Ø
+5V
UKB
TO NDS GND
C C# D D# E F F# G G# A A# B C NOTE
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 KEY#
4 5 6 OCTAVE
C L16–2
C# L16–3
D L16–4
D# L16–5
E L16–6
F L16–7
F# L16–8
G L16–9
G# L16–10
A L16–11
A# L16–12
B L16–13
CX L16–14
PASS THRU CONN
804
805
136
134
L15–4
L15–3
L15–2
L15–1
Ø
+5V
136
804
805
134
LKB
TO NDS GND
B C C# D D# E F F# G G# A A# B C NOTE
36 37 38 39 40 41 42 43 44 45 46 47 48 49 KEY #
4 5 OCTAVE



UPPER & LOWER KEYBOARD ALTERNATE PWB CONFIGURATION USED ON EARLY UNITS

H000-006245 2½M 3/84 PRINTED IN U.S.A. HAMMOND ORGAN COMPANY GRAPHICS COMMUNICATIONS